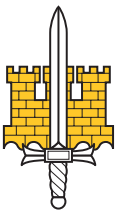

National Defence College
Department of War History
Publication series 1

In Pursuit of Mobility

The Birth and Development of Israeli Operational Art. From Theory to Practice.

Pasi Kesseli

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IN PURSUIT OF MOBILITY

The Birth and Development of Israeli Operational Art. From Theory to Practice.

Academic dissertation to be publicly discussed, by due permission of the Faculty of Arts at the University of Helsinki in lecture room 13, on the 25th of January, 2002 at 12 o'clock.

Pasi Kesseli

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National Defence College of Finland, Publication series 1
N:o 6

Cover:
Israeli tanks ready for action during the May crisis before the Six Day War.

ISBN 951-25-1271-8
ISSN 1456-5196

Edita Oyj, Helsinki 2001

To my daughters Katariina and Marianna

ACKNOWLEDGMENTS

My superior and colleague at the Department of Military History at the National Defence College of Finland, Lieutenant Colonel Ari Raunio M.Pol.Sc., provided the first impetus to examine the foundations and origins of Israeli military thinking in 1995. Since then he has selflessly supported me in many different ways for which I owe him a great debt. He made me believe that it is worth trying to explain the conduct of war through historical analysis even with the limited quantity of detailed written primary documents available. This is in spite of the fact that there is no absolute truth on the battlefield.

This work would not have been possible without the willing co-operation and assistance of dozens of men and women, both in Finland and abroad. It is impossible to mention all of them. Nevertheless, I will mention some people and institutions.

In August 1997, Rear Admiral Esko Illi, commander of the National Defence College of Finland, and Professor Pekka Sivonen, who was responsible for research activities at the Defence College, made it possible for me to begin doctoral studies at the University of Helsinki. To them – as well as to Professor Mikko Viitasalo, predecessor and also successor of Professor Sivonen – I would like to express my sincere thanks. Without their trust in my abilities to reach the objective and their efforts to support my research trips abroad financially, this work would have been out of the question.

My colleague and dear friend at the National Defence College of Finland, Docent Eero Elfvengren Ph.D., has been my moral support at all times. To him I owe a special debt. In difficulties and at academic crossroads he was always able to spur me to struggle ahead.

I wish to express my sincere appreciation to Professor Yrjö Kaukiainen at the University of Helsinki for his instructions and guidance during my studies as well as to Professor Ohto Manninen at the Department of Military History in the National Defence College of Finland.

I have also greatly profited from the personal accounts of a number of Israeli scholars and former military men. Their memoirs and answers provide a deeper perspective on other sources. I owe respectful thanks to Lieutenant General Dan Shomron, Major General Avraham Adan, Major General Uri Simhoni, Professor, Colonel Yehuda Wallach, Professor, Lieutenant Colonel Yoav Gelber, Professor Alon Kadish, Doctor, Colonel Hanan Shai, Doctor, Colonel Meir Pa'il and to Doctor, Colonel Shai Shaul. In addition, I am especially grateful to Hanan Shai for his help in organising all those practical details that made my interviews and archive research in Israel possible.

I would also like to tender my sincere thanks to the reviewers of my manuscript, Professor, Lieutenant Colonel Yoav Gelber and to Colonel (National Defence College, Finnish Defence Forces), Doctor Vesa Tynkkynen.

I owe a great debt to many institutions; the Liddell Hart Centre for Military Archives at King's College London, the IDF & Defense Establishment Archive in Tel Aviv and the Library of the National Defence College of Finland, among others. The personnel of these institutions were able to answer my endless requests tirelessly and in a friendly manner. I owe special thanks to Professor Brian Bond, who made my visit to the Liddell Hart Archive possible; to the Director of the IDF & Defense Establishment Archive, Doctor Mrs. Michal Tsur

and her subordinates Doron, Sheila and Noga; to Mr. Ehud Eilam, who helped me with translations, and to Matti Hongisto M Sc. and his whole staff at the Library of the National Defence College of Finland in Helsinki.

Several funds also supported my research trips. In this context I wish to specially acknowledge the Military Scientific Fund of Marshal Mannerheim of Finland, the Eevi and Emil Tanninen Fund, Fortum Ltd. and Tampella Ltd.

I was fortunate enough to have the opportunity to use the residence of the Finnish Jaeger Tradition Association as my working place during my studies. All those who made this possible deserve the warmest praise.

Susanna Jyrkinen at the Military Museum of Finland drew my maps. I also owe special thanks to her and her superiors for supporting me.

The final version of my work required a proper process of language inspection and proofreading. However, I was happy that my friends, Nicholas Hill M.A. and Brendan Humphreys, were able to do that job. Without sparing themselves, on a very tight timetable they both read my manuscript and made corrections to my text several times during the writing process. I owe my sincere thanks to Nick and Brendan.

I am proud that my former workplace, the Department of War History at the National Defence College of Finland, promised to publish my work. I wish to express my warmest thanks to its chief, Colonel Pekka Uutaniemi M.Pol.Sc., and also to all my former colleagues for their encouraging attitude towards my work. In this context, I would like to thank Edita Oyj for their pleasant co-operation during the home stretch when I was finishing my book.

Finally, the long time that I spent studying would, on the whole, not have been possible without both the moral and physical support of my closest relatives. My parents, Aili and Osmo Kesseli, believed in my intentions the entire time, which greatly assisted me mentally in avoiding the pitfalls of the working process. I also wish to express my warmest thanks to my fiancée, Erja Wasenius, who greatly helped me in the final phase of my work by assisting in organising practical details and also by giving moral support in many ways. But most of all, I owe my dearest praise to my young daughters Katariina and Marianna. Although they were too young to understand their role in this work during the working process, and continue to be so today, their sweet and natural everyday presence gave me strength to believe in the future.

Kuopio 25 September 2001

Pasi Kesseli

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Abbreviations and terms

AA =	anti-aircraft
AFV =	armoured fighting vehicle
Aliyah =	immigration wave to Palestine (later Israel)
A'man =	a division of the IDF's intelligence services
Anshei Machal =	foreign volunteers in Israel's War of Independence
APC =	armoured personnel carrier
ATGW =	anti-tank guided weapon
AWACS =	Airborne Warning and Control System
Bar-Giora =	Jewish defence organisation at the beginning of the 20th century
Blitzkrieg =	German lightning warfare doctrine during WW II
CHEN =	Jewish (later Israeli) woman's corps
C-in-C =	Commander-in-Chief
ECM =	electronic counter measures
ETZEL =	extremist Jewish defence organisation, also known as Irgun Zevai Leumi
FM =	field manual
FOSH =	Haganah's mobile field companies, also known as Plugot Sadeh
GADNA =	Jewish (later Israeli) youth organisation
Gafirim =	Jewish Settlement Police, also known as Notrim
Gayessot =	army corps
Gayis =	army corps
Gdudim =	Jewish Legion, a Jewish detachment in the British Army during WWI
G.O.C. =	General Officer Commanding
Haganah =	Jewish defence organisation during the British Mandate
Hashomer =	Jewish defence organisation at the beginning of the 20th century
HAYIL =	Jewish Brigade Group, a Jewish detactment in the British Army during WWII
HIM =	Jewish home guard
HISH =	Haganah's field corps in the 1940s before Israel's independence
Histadrut =	Jewish General Labour Federation
HQ =	Headquarters
IAF =	Israeli Air Force

IDF =	Israeli Defence Forces
Irgun Zevai Leumi =	extremist Jewish defence organisation, also known as ETZEL
Knesset =	the Israeli parliament
Kibbutz =	Jewish argicultural settlement practicing collective ownership
LEHI =	extremist Jewish defence organisation, also known as the Stern Gang
Luftwaffe =	German Air Force during WW II
MAFCHASH =	Ground Forces Headquarters
Maozim =	Israeli stone- and sand-reinforced strongpoint of 10 to 30 men in the Bar Lev Line on the eastern shore of the Suez Canal
Mapai =	Workers' Party of the Land of Israel, ancestor of the Labour Party
Mapam =	Left-wing Israeli party
MATKAL =	IDF General Staff
Merchavit =	local defence
Mishmar Hagvul =	Jewish Border Police and Frontier Guard
Modeyin =	IDF Military Intelligence
Moshav =	Jewish argicultural settlement practicing private ownership
Mossad =	Israel's Central Intelligence and Security Agency
MRL =	multiple rocket launcher
Mutzavim =	Israeli concrete bunker of 10 to 30 men in the Purple Line on the Golan Heighs
NAHAL =	pioneer fighting youth, a Jewish para-military agricultural organisation
Nahalnik =	member of the NAHAL
NCO =	non-commissioned officer
Nodedet =	mobile patrols of the Haganah
Notrim =	Jewish Settlement Police, also known as Gafirim
OC =	Officer Commanding
OODA =	decision making model in manoeuvre warfare theory (observation – orientation – decision – action)
PALMACH =	strike companies, a Jewish scout force established by the British in response to the German threat from North Africa during WW II
Palyam =	Palmach's naval company

Pikudim =	regional command; for example, the Southern Command
Plugot Sadeh =	Haganah's mobile field companies, also known as FOSH
Poum =	Haganah's covert police, intelligence and counter-intelligence force
Poum =	IDF Command and General Staff College
RAF =	Royal Air Force (British)
RPV =	remotely piloted vehicle, a miniature aeroplane equipped with intelligence devices
SAM =	surface-to-air missile
SAS =	Special Air Service (British Army)
S.N.S. =	Special Night Squads, a Jewish counterguerrilla force at the end of the 1930s
Sayeret =	intelligence unit, also used in counterguerrilla operations
SHAEF =	Supreme Headquarters of Allied European Forces (during WW II)
Shay =	Jewish intelligence organisation in the 1940s before Israel's independence
Sherut Aviri =	Palmach's air platoon
Shiliv Kochot =	combined arms
Shin Bet =	Israel's domestic security service
Stern Gang =	extremist Jewish defence organisation, also known as LEHI
Taozim =	Israeli company-size stronghold in the Sinai behind the Bar Lev Line
Ugdah =	Jewish task-force, equivalent to a division
Yishuv =	Jewish community in Palestine during the British Mandate

"He who knows the art of the direct and the indirect approach will be victorious. Such is the art of manoeuvring. The experts in defence conceal themselves as under the ninefold earth. Those skilled in attack move as from above the ninefold heavens. Thus they are capable both of protecting themselves and of gaining a complete victory." (Sun Tzu, 500 B.C.).*

* Sun Tzu: The Art of War, translated by Samuel B. Griffith, Oxford University Press, N.Y. 1963, p. 85 and 106.

Preface

Background

Today, the Israeli Defence Forces (IDF) are one of the most modern and powerful armies in the world. However, their history is relatively short; only a half-century long. Despite this, Israel has been involved in five conventional wars and several more or less regional conflicts since it came into being in May 1948.[1] This is not to mention the battle against the activities of different Palestinian guerrilla groups between the major wars, or "rounds" as the Israelis call them. At the operational level, the Israelis have succeeded to a great extent in the face of their numerically much more powerful opponents. This has drawn the attention of academic researchers and military analysts from all over the world. The result has been that the Arab-Israeli wars have been the subject of numerous studies and have had more books written about them than any other regional conflict; with the exception perhaps of the Vietnam War and the American Civil War.

Despite the sheer volume of research on the Arab-Israeli wars, there is one striking similarity in these works. The great majority of the sources about these wars concentrate on either the political context of the wars or – from the military point of view – on individual wars or even on individual events in the wars. In addition, much of the literature on the wars of the Middle East was written soon after the conflicts. It therefore more or less lacks a critical perspective of the art of war of each side. Thus, it is not possible to find the military philosophy that provided the underpinnings of the armies that waged war in the Middle East in these books and studies. Only a couple of books and articles partly analyse the Israeli art of war, but they – except for the most recent ones – deal with the period up to the Yom Kippur War in 1973 (inclusive). No detailed official histories have been published for any of Israel's wars. In addition, the works mentioned above focus more on investigating the Israeli Defence Forces as an entity in Israeli society and, although military matters have also been dealt with, they do not penetrate deep into the foundations of Israeli military thinking.

It seems that the principal reason for the lack of study of the Israeli art of war has been the sensitive security situation of the state. Israel, a society that has almost always been endangered by different types of external military threats since it came into being, is not prone to releasing information about its military doctrine and the foundations thereof. Not enough time has passed for Israeli or Arab archives to be opened to foreign researchers to the extent that would be expected on the basis of security classification and time elapsed. Nevertheless, some information has been continuously available to the public and to military commentators and analysts in Israel and abroad since Israel's independence. This includes battle reports, the strengths of the armed forces

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[1] The War of Independence in 1948 – 1949, the Sinai Campaign in 1956, the Six Day War in 1967, the War of Attrition in 1969 – 1970 and the Yom Kippur War in 1973 are classified as conventional wars. Israel's operation "Peace for Galilee" in 1982 in Lebanon is categorised as a so-called "compound war", which is a combination of counter-guerrilla war and conventional war. Operation "Litani" against the Palestinian guerrillas in Lebanon in 1978 can be seen as a regional conflict that does not have the status of an all-out war.

and interviews and memoirs of key military personnel and political decision-makers. Therefore, despite the seeming shortage of research material, there is a lot of detailed, though mostly scattered, material about the Israeli art of war in different sources. However, they do not adequately explain the background of Israeli military thinking nor do they describe in any theoretical sense the outcome of the past wars of the Middle East or their influence on the development of the IDF. Thus, it can be said that some hints of the origins of the Israeli art of war can be found in several sources, but in most cases they are statements without deeper analyses of the original concepts and their Israeli applications. From this point of view, it is amazing that while the Israeli tendency for mobile warfare at the operational level has been striking, no one has properly tried to explain and analyse its philosophical background over the long-run. One explanation for this could lie in the difficulties in understanding the whole operational level of warfare from the scientific point of view. While to professional soldiers this might have been more clear than to those who are civilians, there seems to be some truth in Professor Robert E. Harkavy's statement that "usually it is only military officers – and perhaps a few professional historians and social scientists – that can operate at the levels of grand tactics and of even smaller-scale tactics."[2] In addition, the tradition of studying the art of war among military circles has never been very widely spread, and Israel, where practical matters have guided military education, is not an exception to this.

Research problem

The purpose of this work is to examine the background and reasons behind the search for operational mobility within the Israeli Defence Forces. This study covers the years from the beginning of the 20th century to the wake of the Yom Kippur War in 1973. The years before Israel's independence provide a background for this study, but the main emphasis is on the time since Israel's independence. During this period, the IDF's doctrine and operational principles became a coherent entity that were tested in five wars. The stress is on conventional wars and not so much on peacetime low intensity operations. The major reason for this definition is the wider political and social dimensions of unconventional warfare. Although military methods are also partly used in counter-insurgency, and although units of the Israeli Defence Forces have also been used in these missions in Israel, many of the methods have not, however, been of a purely military nature. Besides, until the 1980s the scope of counter-guerrilla operations, with some exceptions, does not necessitate a connection of the analysis of the basis of counterinsurgency with the operational military thinking behind conventional warfare. Therefore, the Israeli counter-insurgency doctrine should rather be a subject of an

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[2] Harkavy, Robert E: The Lessons of Recent Wars: Toward Comparative Analysis, Harkavy, Robert E./Neuman, Stephanie G. (ed.): The Lessons of Recent Wars in the Third World, Volume I, Approaches and Case Studies, Lexington Books, Massachusetts/Toronto 1985, p. 5 – 6 and 8.

Robert E Harkavy was a professor of political science at Pennsylvania State University in 1985.

independent study. This is the main reason why Israel's operation "Peace for Galilee" in 1982 in Lebanon is excluded. Nevertheless, there are some connections between the doctrines of conventional and unconventional warfare. These cases will be studied in chronological order.

The primary aim of this thesis is to examine the foundations and origins of Israeli military thinking. No attempt has been made to provide a detailed historical account of specific battles and individual engagements. In order to achieve the primary aims, the following goals have been set:

- To examine the thinking, and especially the intellectual foundations, of the people who have been responsible for the development of the operational doctrine.
- To collect and analyse the backgrounds of the doctrinal principles that have been adopted.
- To view the application process of these principles from theory to practice. This means an examination of the development of the overall military system both in peacetime and wartime, a study of the training system, and also an examination of organisation and procurement issues.
- To consider the role of war experiences in the Middle East and abroad on the development of doctrine. An important question is how the collection and analysis of data has been arranged and how experiences have been connected to the development of doctrine.

In addition, in the analyses, Israeli operational concepts have also been considered from the viewpoint of the theory of manoeuvre warfare when possible. Although this theory is not an Israeli invention and lies outside the years this study covers, philosophically Israeli operational concepts and practise have had basic similarities with the principles of manoeuvre warfare theory. This also provides an interesting viewpoint for assessing past Israeli operational applications in today's terms.

Previous research: sources on the development of the Israeli Defence Forces and the Arab-Israeli Wars

Studies, books and articles written on the Arab-Israeli Wars and on the Israeli Army are mostly of Israeli-origin or have been written by Jews outside Israel, although several works have also been written in the United Kingdom and in the United States. However, since the Yom Kippur War of 1973 the Americans have shown still more interest in the wars of the Middle East. It is also obvious that the Soviets – whose equipment had been used by the Arabs and whose doctrine most of the opponents of Israel have applied in their preparations for war – have studied the Arab-Israeli wars and the Israeli art of war. The Arabs have also apparently conducted studies after their defeat in 1967. Nevertheless, most of the Soviet and Arab sources are still either unavailable to foreign researchers or their information is not published. It also must be noted that there are studies and books written in Hebrew. Because of the world's interest in the wars of the Middle East, the most significant works in Hebrew have been translated into English, with the possible exception of the most recent ones.

From the viewpoint of this study, previous research on the development of the Israeli Defence Forces and on the Arab-Israeli Wars can be divided into three main categories: The first includes studies and literature that examine the Israeli Defence Forces in chronological order both during peacetime and wartime. The second group consists of works that deal with particular wars in the Middle East. The third group includes studies and literature that are concerned with some other aspects, such as the development of doctrine or the structure and activities of the IDF. Some of these sources also overlap and can be placed in more than one category.

In the first category, the most important works are: Yigal Allon's *The Making of Israel's Army* (1970), Nigel T. Bagnall's *The Israeli Experience: A Study of Quality* (1973), Edward Luttwak's and Dan Horowitz's *The Israeli Army* (1974), Gunther Rothenberg's *The Anatomy of the Israeli Army* (1979) and Martin van Creveld's *The Sword and the Olive* (1998).

General (IDF) Yigal Allon, one of the early military leaders of the Jewish defence organisations during and after WW II and later a minister in the Israeli government, provides a perspective on the bases of the development of Israeli doctrine. Some details about the Israeli art of war can be found in his book as well. Nevertheless, Allon doesn't particularly analyse the background of the operational thinking behind the development of the IDF. Therefore, the doctrine is mostly analysed at the strategic level and in the political context. In addition, this book only covers the years up to the late 1960s. However, because of Allon's status in Israel, *The Making of Israel's Army* gives one rather important point of view with some insights behind the doctrinal framework of the IDF during the 1950s and 1960s.

Nigel T. Bagnall's (Brigadier, British Army, later General, Sir) study is a longitudinal analysis of the background of the performance of the IDF. The viewpoint is of the military art, in many cases also at the operational level. The obvious explanation for this is Bagnall's military background. The conclusions that have been drawn are sound. Nevertheless, in a way they lack depth. Bagnall neither thoroughly considers what has been typical of the Israeli art of war in certain phases in the past, nor does he analyse where the operational art might come from despite the fact that he has interviewed several Israeli military leaders. Whatever the reasons behind this, one explanation might be the shortness of the study or the sensitivity of this question at the time this work was conducted.

The first rather detailed analysis of the Israeli Army was made by Edward Luttwak and Dan Horowitz in 1975. This book is based mainly on Israeli sources, though not on archival documents. It also has endnotes that give the researcher the possibility of judging the value of the information. The authors go into the development of the IDF in chronological order. They analyse, according to the introduction, the IDF's development from the tactical, strategic and political viewpoints. A more thorough familiarisation with this division shows that the word "strategic" in Luttwak's and Horowitz's vocabulary is parallel to the term operational because several operational concepts are also included. On this basis, the book also provides the reader with a good framework for perceiving some major features of the Israeli art of war. Instead, the weakness in this context is that although some central tactical and operational principles are presented and also explained, an analysis of the origins rests only on a few thinly supported statements. Thus, Luttwak and

Horowitz don't consider more thoroughly the links and similarities/differences between foreign influences and Israeli application. This obviously fell outside the scope of the book, although it might also have been a question of sources.[3]

Professor Gunther Rothenberg's book *The Anatomy of the Israeli Army* is, in a way, a combination of Allon's and Luttwak's and Horowitz's works. This is natural, because both books are included in Rothenberg's source list, and also the source base seems similar to Luttwak's and Horowitz's with the exception that Rothenberg's book was published five years later than Luttwak's and Horowitz's and also includes material from between 1975 and 1979. Obviously, because of the quality of the sources and of the viewpoint, Rothenberg also does not describe the reasons behind the adopted principles and models of action in the IDF, although he provides some review of several aspects of the military art. This is mostly at the tactical and strategic levels without more closely examining the philosophical background.[4]

Martin van Creveld's *The Sword and the Olive* is a comprehensive study that tries to see the IDF as a part of Israeli society. Van Creveld has also extended the coverage of his work up to our own time and filled in the earlier picture given by Luttwak and Horowitz and, to a lesser extent, the others with new sources and information. In addition, this book consists of a reference apparatus that allows the reader to follow the sources of the information. Despite its broad viewpoint, *The Sword and the Olive* also provides a view on purely tactical and operational matters within the IDF. In addition, van Creveld has had a critical perspective of his subject and has therefore succeeded in forming a rather convincing picture of the IDF's past. Nevertheless, like the other studies dealing with the IDF', this book neither contains an analysis of the typical traits of Israeli operational doctrine nor an examination of its origins. In any event, *The Sword and the Olive* provides a good framework for perceiving the changes in the IDF in chronological order.[5]

The second group; i.e., previous research on the Arab-Israeli wars, contains a large number of books that concentrate on the events and details of the belligerent armies in the Middle East. Their shortcomings are a lack of analysis. They mainly include only battlefield descriptions, dates, names of commanders, numbers and strengths of forces etc. Of course, there are also exceptions. Trevor Dupuy's *Elusive Victory* (first published in 1978) is one of them. As a soldier, Colonel (U.S. Army) Dupuy, a well-known military analyst, has been able to conduct a very thorough analysis of the Arab-Israeli wars

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[3] In 1975 Professor Luttwak was an Associate of Georgetown University's Center of Strategic and International Studies and a Visiting Professorial Lecturer at the John Hopkins University School of Advanced International Studies. At that time, Doctor Horowitz was senior lecturer in political science and sociology at the Hebrew University of Jerusalem.

This book includes appendices that contain information on the organisation and personnel of the IDF.

[4] When *The Anatomy of the Israeli Army* was published in 1979, Rothenberg was Professor of Military History at Purdue University, Indiana. He is a WW II veteran of the British Army. In addition, he served in the U.S. Air Force from 1949 to 1955.

[5] Professor Martin van Creveld is a well-known military historian who has taught at the Hebrew University in Jerusalem since 1971. He has written twelve books.

from the War of Independence to the Yom Kippur War (inclusive). This book can be seen as a base for starting research on the wars of the Middle East. The sources of Dupuy's book are also broad and contain both Arab and Israeli materiel, among them many interviews. In addition, Dupuy has conducted a comparative analysis of the armies during the period covered by his book, including tables of the strengths, losses and orders of battle in belligerent armies. Excluding the short summaries of the experiences of individual wars, the study does not, however, include an analysis of the development of the Israeli art of war or its background, which obviously was not even the purpose of this wide-ranging book.

The third category consists of studies and literature that deal with the development of the IDF and its doctrine, but in the strategic and political context. The most important works in this group are: Zeev Schiff's *A History of the Israeli Army* (1974 and 1985), Louis Williams' *The Israeli Defense Forces* (1989), Eliezer Cohen's *Israel's Best Defence* (1993), Zvi Lanir's *Israeli Security Planning in the 1980s* (1984), Yoav Ben-Horin's and Barry Posen's *Israel's Strategic Doctrine* (1981), Raanan Gissin's dissertation *Command, Control, and Communications Technology: Changing patterns of Leadership in Combat Organizations* (1988), Michael I. Handel's *The Evolution of Israeli strategy* (1994) and Ariel Levite's article *Offense and Defense in Israeli Military Doctrine* (1990).

Zeev Schiff, a respected Israeli military journalist of the Israeli newspaper *Ha'aretz* and commentator for both the *New York Times* and the *Washington Post*, has written several books on the wars of the Middle East and on the Israeli Army. *A History of the Israeli Army* has two editions. The second edition extends the period of time covered up to the mid 1980s. These books, although they do not analyse the Israeli art of war, offer, nevertheless, a lot of basic facts on the development of the IDF, including training. Louis Williams' *The Israeli Defense Forces*, an official publication of Israel's Ministry of Defence, gives the same view as Schiff's books. Williams' work is more detailed and includes a lot of basic information on the IDF, and some views on the art of war. It reaches up to the end of the 1980s. Eliezer Cohen's book *Israel's Best Defense*, an account of the Israeli Air Force, can also be included in this category. Colonel Cohen (IDF, ret.) is a former pilot and helicopter squadron commander of the Israeli Air Force. His book, although focusing more on battlefield descriptions of the Israeli wars than on peacetime development, deals with several key lines of development in both the IAF and the IDF. Nevertheless, the narrative of the book progresses more via observation than by any analysis of the background of the development.

Finally, several studies concentrate on the doctrinal issues of the IDF. Yoav Ben Horin's and Barry Posen's *Israel's Strategic Doctrine* is a short, but illustrative, study of Israel's political-military environment and its influence on the evolution of the IDF's doctrine. This study is a part of a Rand research project for the Director of Net Assessment, Office of the Secretary of Defense, United States, and was supervised by several Israeli and American scholars. The study, including footnotes, is based on a large pool of source material, including published Israeli articles and interviews with people who have been involved in the development process. Ben-Horin's and Posen's study is able to outline the central principles behind Israeli doctrine, extending from the operational level to war policy, but because of its brevity cannot explain in

detail the thoughts behind the development. Instead, Doctor Ariel Levite's analysis *Offense and Defense in Israeli Military Doctrine* concentrates on the operational level of warfare and provides a critical survey of the dilemma of offence and defence in Israeli operational doctrine. Although Levite's military-professional extract is solid, he, like other researchers, accords the examination of the backgrounds of the chosen doctrinal principles and operational concepts a secondary place and, instead, explains more the deficiencies of offensive principles in the historical context in the IDF.[6]

Raanan Gissin's thesis *Command, Control, and Communications Technology: Changing patterns of Leadership in Combat Organizations* offers insights – though on a quite narrow scale – on the Israeli way of thinking on the operational art. This work concentrates on the organisational development of the Israeli Air Force (IAF), but also introduces the development of central command principles within the context of the entire IDF. Gissin has included a study of organisational theory in his research. This approach allows a broader analysis of the military art with regards to the "hard" facts formed by organisational matters behind the art of war, in addition to philosophy. The origins of Israeli military thinking and operational issues are, however, analysed less.

Israeli Security Planning in the 1980s, a collection of articles edited by Colonel Zvi Lanir (IDF, ret.), concentrates on Israeli defence planning at the strategic level. However, this book has a historical base, as has Ben-Horin's and Posen's study. Professor Michael I. Handel's *The evolution of Israeli strategy: The psychology of insecurity and the quest for absolute security* concentrates on the strategic level of warfare, also providing examples from the past. Together both Lanir's and Handel's studies complement Ben-Horin's and Posen's research and, despite their lack of operational analysis, provide an opportunity to arrange the central elements behind the Israeli art of war.[7]

Previous research on the theory of mobile and mechanised warfare

There are adequate sources on the general theoretical background of this study. The most important of them are the works dealing with the philosophy behind the concept of mobility, and the studies and books describing the ideas of the theoreticians of mechanised warfare as well as the thinking of those military leaders who have applied these concepts. Several translated versions of Sun Tzu's *Art of War* (1963, 1987, 1993) provide sufficient proof of the long-term tendency of armies towards mobility. In the 20th century, thoughts of combining mobility with the military technology of mechanised armies arose. The concepts of the early phases of mechanised warfare in the 1920s and 1930s can be seen in the contemporaneous works of the British military

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[6] Doctor Levite is a former IDF officer who has been an analyst at the Israeli Ministry of Defence and Senior Research Associate at the Jaffee Center for Strategic Studies at Tel Aviv University. Levite's article is a summary of his book *Offence and Defense in Israeli Military Doctrine*.

[7] Handel has been Professor of Strategy at the U.S. Naval War College. He has published numerous books on the theory of the art of war.

analyst Major General John Fredrick Charles Fuller, *The Foundations of the Science of War* (1926) and *Armored Warfare: An Annotated Edition of Lectures on F. S. R. III* (1943), and in the works of Sir Basil Henry Liddell Hart, with the most significant of them being *Strategy* (1954, 1967, 1991) and *Memoirs* (1965). On a limited scale, the writings of the Soviet theoreticians Mikhail N. Tukhachevsky and Vladimir Kiriakoviz Triandafillov can also be included. In addition, information on the evolution of mechanised warfare can be found in the memoirs of several WW II commanders, the most important of them being German General Heinz Guderian's *Panzer Leader* (1952) and *Erinnerungen Eines Soldaten* (1956), and in the biography of British Field-Marshal Bernard Law Montgomery, *Monty* (1981), written by Nigel Hamilton.

Despite the abundance of sources, there are several problems in the study of the development of mechanised warfare. The first is the dispute over the theoretical origins of armoured warfare. Although scholars and military men, including Germans, agree upon the British impact on the German style of armoured warfare in WW II, they have different opinions about Fuller and Liddell Hart. In addition, Liddell Hart, unlike Fuller, continued writing after WW II and also modified his early thoughts. Therefore an analysis is necessary to find out the key thoughts of these men, in order to make possible the further examination of their influence on the Israeli art of war and to separate their influence from the influence of German practice. The most important of the studies and books in this context are: Brian Bond's *Liddell Hart: A Study of his Military Thought* (1977), Kenneth Macksey's *The Tank Pioneers* (1981), John Mearsheimer's *Liddell Hart and the Weight of History* (1988), Paul Dyster's dissertation *In the Wake of the Tank: The 20th-century Evolution of the Theory of Armoured Warfare* (1988), R. M. Ogorkiewicz's *Armoured Forces: A History of Armoured Forces and their Vehicles* (1970), Robert O'Neill's *Doctrine and Training in the German Army 1919 – 1939* (1965), Anthony Trythall's *"Boney Fuller": The Intellectual General 1878 – 1966* (1977) and Brian Holden Reid's *J. F. C. Fuller: Military Thinker* (1987).

Professors Brian Bond and John Mearsheimer provide perspectives on Liddell Hart's role as a military theoretician. In the context of the development of armoured warfare, they have mildly divergent views. This problem will be discussed in greater detail in chapter 1. However, in brief Brian Bond tends to see Liddell Hart as the most important opinion-maker behind the German *Blitzkrieg* doctrine, although he also accords value to the other British tank pioneers and theoreticians. Doctor O'Neill and R.M. Ogorkiewicz have similar interpretations to Bond. In addition, Brian Bond has devoted one chapter of his book to Liddell Hart's Israeli connections. John Mearsheimer sees Liddell Hart as being less influential in armoured warfare. He stresses the importance of other British thinkers, like Fuller and the early tank officers, on the development of armoured warfare concepts between WW I and WW II; as do Anthony Trythall and Kenneth Macksey to a greater or lesser degree. Doctor Holden Reid concentrates on Fuller's life and military thinking and also evaluates the differences and similarities of Fuller's and Liddell Hart's thoughts in his book. Paul Dyster's descriptive dissertation provides an overview of the development of armoured warfare doctrines from the birth of the tank up to the

1980s. Although it contains a lot of details, this work does not, however, deeply penetrate the thinking behind the development.[8]

Finally, the modern theory of manoeuvre warfare is also studied in this work to show the continuity of the development in the pursuit of mobility in the latter part of the 20th century. Although the theory of manoeuvre warfare is an invention of the 1970s, philosophically it can be seen as a combination of the concepts of "indirect approach" and "deep battle". William S. Lind, an American military analyst, presents the birth of manoeuvre warfare theory in his book *Maneuver Warfare Handbook* (1985). This work, furnished with endnotes, gives a short overview of the history of warfare and of the problems of mobility, but mainly concentrates on the problems of mobility in the Unites States Armed Forces. Christopher Bellamy's *The Evolution of Modern Land Warfare: Theory and Practice* (1990) and Richard Simpkin's *Race to the Swift: Thoughts on Twenty-First Century Warfare* (1985) can be included in this category. These works represent the views of European officers on the concept of manoeuvre warfare and are mostly along the lines of the Americans. Clayton R. Newell's *The Framework of Operational Warfare* (1991) illustrates the theoretical background of manoeuvre warfare. Newell also tries to explain a method of researching operational art. This part of the book remains opaque because it is difficult to read but it provides, however, some ideas on perceiving the complexity of operational art. Finally, Robert Leonhard's book *The Art of Maneuver: Maneuver-Warfare Theory and AirLandBattle* (1991) combines studies of manoeuvre warfare theory. Leonhard has succeeded in describing the history of the pursuit of mobility in a simplified form and has, in addition, been able to see several key clearly distinctive principles in manoeuvre warfare. Both Newell's and Leonhard's books have endnotes. This enables the reader to see the thinking and origins of their thoughts with regards to the early interpreters of mobility like Fuller, Liddell Hart and the Germans.[9]

Central definitions

Definitions, in particular of the levels of the art of war, have a special significance in this work. Because the concepts are often used in different ways, they must be defined precisely. The idea of the term "the art of war" or its synonym "military art" has varied greatly in Israel depending on who is defining it: civilian scholars, scholars with a military background or purely

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[8] Brian Bond was a personal friend of Liddell Hart's during the latter's final years. In the 1990s Bond was Professor of the Department of War Studies, King's College London. Doctor Brian Holden Reid is a well-known Fuller researcher and Professor Brian Bond's colleague at King's College.

John Mearsheimer is an American scholar, who was Professor of Political Science at the University of Chicago when he wrote his book on Liddell Hart.

Anthony Trythall and Kenneth Macksey are British officers, who both are known for their contributions to military literature.

R. M. Ogorkiewicz is a British researcher who specialises in fighting vehicles and armoured warfare.

[9] Newell and Leonhard are both U.S. Army officers and historians.

professional soldiers. It is generally accepted that the military art was divided in the IDF from its early years into three levels, although the exact term might vary from corresponding words elsewhere. While the understanding of the word "tactics" has been clear, such words as "grand tactics", "management" and "strategy" have typified the operational level of warfare, while "strategy" (partly) and "grand strategy" have typified that level where policy has also been involved. One characteristic has also been that the operational level has typically been defined according to the objective, i.e., what has been the desired outcome of the operation, and not according to the size of the force for the task. According to Doctor, Colonel (IDF, ret.) Meir Pa'il, the method of dividing the military art into three was adopted from the British. In this model, "grand tactics" was a synonym for organising military issues at the operational level of warfare. According to him, however, during the first two decades of Israel's independence Israeli officers were not very well aware of the level between "strategy" and "tactics", as was the case in the Anglo-Saxon world at that time.[10]

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[10] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber 11 May 2000 in Haifa, Professor Alon Kadish 14 May 2000 in Jerusalem, Major General (ret.) Uri Simhoni 15 May 2000 in Tel Aviv, Colonel (ret.), Professor Yehuda Wallach 16 May 2000 in Tel Aviv, Colonel, Doctor Shai Shaul 17 May 2000 in Tel Aviv, Lieutenant General (ret.) Dan Shomron 22 May 2000 in Tel Aviv, Major General (ret.) Avraham Adan 22 May 2000 in Tel Aviv and Colonel (ret.), Doctor Meir Pa'il 26 May 2000 in Tel Aviv.

Professor Yoav Gelber, Haifa University, is an expert on the history of the founding of the IDF, a specialist on the Yom Kippur War and an expert on the history of Israeli intelligence. Professor Gelber was also in active service before his civilian career.

Professor Alon Kadish, Hebrew University in Jerusalem, is one of the top lecturers on military history in Israel and an expert on Israel's War of Independence.

General Simhoni ended his military service as deputy commander of the Northern Command in which post he served during operation "Peace for Galilee". Simhoni served in several paratroop and infantry assignments during his career, including a stint as commander of the Golani Brigade.

Professor Wallach is a well-known Israeli historian. He was also a personal friend of Sir Basil Liddell Hart. During the Sinai Campaign of 1956, he commanded a divisional task force.

Colonel Shaul is Head of the Department of History, IDF.

General Shomron was the 13th Chief of Staff, IDF. During his active career he served in different missions ranging from paratrooper actions to being the commander of an armoured brigade during the Yom Kippur War.

General Adan ended his service in the post of Deputy Chief of Staff. His military career consisted mostly of assignments in the armoured forces, including Commander-in-Chief Armoured Corps.

Doctor Pa'il is a well-known Israeli scholar and lecturer. During his active service, Pa'il served in several assignments, mostly in the mechanised infantry. Before his resignation he was the commander of the Israeli Central Officer School. He has written a manual called *Combat Doctrine.*

Professor Wallach tends to divide the art of war in a Clausewitzian way; between tactics and strategy where strategy is the interaction of policy and military means. Wallach, however, admits that there has been an area between strategy and tactics that could also form an independent entirety.

According to General Simhoni, the operational level of warfare was clearly understood in Israel after the Vietnam War. However, he stresses that since the 1940s the IDF actually had four levels in the definitions; tactical, management, strategy and grand strategy, of which management and strategy together were near the present definition of operational.

The tendency to associate the art of war with more practical concerns rather than philosophical issues has been also striking. According to Professor Yoav Gelber, the art of war is not an art but the ability to organise, prepare and wage war. Generals Shomron and Adan support this view. In Israel, military art has been less about theory and more about the means to organise forces prior to battle, and their use in battle. Colonel Shaul tries to analyse this in a more theoretical way. According to his assessment, the Israeli art of war has been a combination of the thoughts of the military theoreticians Antoine Henri de Jomini and Carl von Clausewitz. Jominianism has been a way of understanding the military art as science, meaning mathematics and the organisation of forces. Clausewitz can be seen more as holding a philosophical point of view, giving choices to the imagination. Doctor Pa'il has similar views. He tends to see that both the practical and philosophical approach have existed at all the levels of the art of war in Israel. According to him, some 40 percent of all activities of the IDF can be included in the category of science or professionalism while the remaining 60 percent consist of mental items or art; such as how to use professionalism to outmanoeuvre the enemy or how to use your open-mindedness.[11]

However, it is important to note that until quite recently, Israeli war policy – or strategy in today's terms – has been quite restricted. The emphasis has merely been on military aspects, i.e., on the operational level of warfare which might be a derivative of the dominance of the practical aspect in Israeli military thinking. Within this framework, the Israelis have greatly invested in winning battles. The strategic level, where whole wars are won or lost, has been less important, as Professor Handel describes in his article *The Evolution of Israeli Strategy*.[12] For these reasons, the key definitions are examined quite thoroughly in this thesis. It is also important to note that although the generalisations of the central concepts that have been used in this work are given here; the contents of the definitions and terms have varied. This problem will be analysed more in the context of the subject, if necessary. In addition, certain definitions that are not essential to the understanding of the framework of this study are provided in the main text.

According to Colonel Shaul, the term grand strategy belonged to Prime Minister David Ben-Gurion's vocabulary; it meant the final outcome of the defence policy.

[11] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber, Colonel, Doctor Shai Shaul, Lieutenant-General (ret.) Dan Shomron, Major General (ret.) Avraham Adan and Colonel (ret.), Doctor Meir Pa'il.

Carl von Clausewitz was a Prussian General and military theoretician, and a contemporary of Napoleon as was also the Swiss military theoretician, General Baron Antoine Henri de Jomini. Jomini, however, tended to see war in a practical manner at campaign level while Clausewitz analysed warfare more in a political context.

[12] Handel, Michael I: The evolution of Israeli strategy: The psychology of insecurity and the quest for absolute security in Murray, Williamson, Knox, MacGregor and Bernstein, Alvin (ed.): The Making of Strategy. Rulers, States and War, Cambridge University Press, New York 1994, p. 570 and 572.

Historical context of the definitions: the art of war

The most quoted and traditional definition of the art of war is the one presented by Clausewitz. Simplifying, Clausewitz described the art of war with the term "the conduct of war", which consists of the planning and conduct of fighting. According to him, **the art of war** is "the art of using given means in combat". In a wider sense the art of war also includes the creation of fighting forces: their raising, armament, equipment and training. In order to separate planning and fighting, Clausewitz divided the art of war into two levels: tactics and strategy. **Tactics** in his concept consists of "the use of armed forces in an **engagement**", which can be defined as a greater or lesser number of individual fighting acts. **Strategy** in Clausewitz's vocabulary means "the use of engagements for the object of the war".[13]

For centuries this dichotomy was regarded as satisfactory. Wars consisted of tactical battles and strategic manoeuvres aimed at seeking the most favourable circumstances for an engagement. Christopher Bellamy gives an illuminating view of the development of these definitions in the military art in his book *The Evolution of Modern Land Warfare: Theory and Practice*. After the adoption of national conscription in Napoleon's Army, the mere growth of armed forces inflated individual battles to series of battles; i.e., to operations. This lead to a recognition of grand tactics, originally Jomini's definition. In this analogy, **grand tactics**, the third level of the art of war between strategy and tactics, was, according to Bellamy, "the art of posting troops upon the battlefield according to the accidents of the ground, of bringing them into action, and the art of fighting upon a map." Grand tactics decide the manner of execution and the employment of troops. **Strategy** was "the art of making war upon the map and comprehending the whole theatre of operations." It decided where to act, but grand tactics lead to the destruction of the enemy. Today grand tactics are commonly called the operational level of war or the operational art.[14]

In the latter half of the 19th century, Helmut von Moltke the Elder, a Prussian and German Field-Marshal, began to use the term operations to describe activities between tactics and strategy. However, it was only after WW I that the concept of the operational level was adopted in the German military art: as was also the case in the Soviet Union. According to Bellamy, simultaneously with the Prussians the terms operational, as well as the operational level of warfare, were adopted in the Anglo-Saxon armies, only the terminology was different. Nevertheless, Bellamy later concedes a little and adds that the British knew the German way of thinking very well and wrote glowing articles about it, but they then forgot the whole thing. This statement is interesting, because it is quite commonly acknowledged that the British and Americans did not at this

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[13] Howard, Michael & Paret, Peter: Carl von Clausewitz. On War, Princeton University Press, Princeton, New Jersey 1984, pp. 127 – 128.

[14] Bellamy, Christopher: The Evolution of Modern Land Warfare. Theory and Practice, Routledge, London and New York 1990, p. 56 and Jomini: Art of War, Greenwood Press Publishers, Westport Connecticut 1971, pp. 69 – 70.

Jomini used a definition of "grand tactics" that can be linked to the operational level of warfare in his work The Art of War.

time understand the operational level of warfare as an independent entity. It is obvious that before the 1970s neither the British nor the Americans had widely crystallised the interface between the strategic and the tactical levels of warfare with several exceptions, the best known of them being Captain, Sir Basil Liddell Hart and General J. F. C. Fuller. Their roles will be discussed more in chapter 1. As late as after WW II, the British divided the military art, according to British General Peter Young, a former deputy commander of the Arab Legion of Jordan and instructor at the Royal Military Academy of Sandhurst, into four levels: grand strategy, strategy at lower level, grand tactics and tactics. In this construct, **grand strategy** covered war policy, **strategy at lower level** or **campaign level** was the battle between two military plans, and **grand tactics** consisted of the broad movements of formations – divisions and brigades – upon the battlefield.[15]

Doctrine

The term **doctrine** describes how an army fights. Raanan Gissin divides Israel's doctrine into two levels: a national-strategic level and an operational-military level. The former can be interpreted as the grand strategic level and the latter as the operational level. According to Gissin, "the national-strategic level of doctrine incorporates the military means and constraints used to formulate and prescribe the likely courses of action open to a nation in pursuit of its policy." At this level, doctrine encompasses the whole spectrum of the threat or actual use of force, including the use or the threat of nuclear weapons for the purpose of deterrence as the ultimate guarantee. At the operational-military level, "doctrine provides the basic principles that govern the employment of combat forces of a given military organisation." At this level, doctrine includes components of force structure, tactics and certain rules of

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[15] Bellamy, p. 60 – 63, Young, Peter: The Israeli Campaign 1967, William Kimber and Co. Limited, London 1967, p. 60 – 61 and Glantz, David M: Soviet Military Operational Art. In Pursuit of Deep Battle, BPCC Wheatons Ltd, Exeter 1991, p. 19.

According to Bellamy, von Moltke also adopted the principle of strategic deployment, the "march-manoeuvre", which preoccupied military thinkers for almost the next hundred years. This concept was related to strategy and logistics and should not be connected to operational manoeuvre.

See also The Royal United Service Institution Debates the Arab-Israeli War, Thursday, July 6, 1967, LH 15/5/304, part 2 and FM 100-5, Field Service Regulations, Operations, Headquarters, Department of the (U.S.) Army, Washington, D.C., February 1962, p. 3 – 4 and 15 – 16.

In the 1960s, the Americans did not speak of the operational level in their Field Manual FM 100-5, they only mentioned the operational environment, which is connected only to the level of command, not to the aim, as is the case today. Although the employment of military force was understood as a means to support national policy, the operational environment was not seen as an entity but a complex spectrum "that makes (it) impossible to reduce the conduct of military operations to a series of precise axioms and simple directions."

engagement.[16] Although it is obvious that these definitions have at least slightly varied since the creation of Israeli doctrine, they are still precise enough to be used in this study.

Tactics

Generally speaking, the term tactics is understood in the same way both in the Western countries and in the former Soviet Union and Russia. **Tactics** is "the art and science of employing available means – especially mental, environmental and battle-technical ones – to win battles and engagements." At the tactical level of war, battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. These victories, put together, achieve operational results. **Engagements** are "small conflicts or skirmishes, usually between opposing forces, and they are normally short in duration." A **battle** consists of "a series of related engagements; it lasts longer than an engagement, involves larger forces, and can affect the course of the campaign." A **campaign** is "a connected series of military operations that form a distinct phase of war. It is waged to accomplish a long-range major strategic objective." According to this view, battles can also be controlled at the operational level, as the Israelis have done. This question will be further discussed later in this section.[17]

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[16] Gissin, Raanan: Command, Control, and Communications Technology: Changing patterns of Leadership in Combat Organizations, Ph.D dissertation, Graduate School of Syracuse University, U.M.I., Dissertation Information Service, Michigan 1988, p. 4 and Handel, p. 553.

See also Ben-Horin & Posen, p. vi – viii and Herbert, Paul Hardy: Toward the Best Available Thought: The Writing of Field Manual 100-5, "Operations" by the United States Army, 1973 - 1976, PhD dissertation, The Ohio State University, U.M.I., Dissertation Information Service, Michigan 1988, p. 1, Glantz, p. 37 and The British Military Doctrine (1989), p. 3 – 4.
Ben-Horin and Posen use logically the same division as Gissin, although they use different terms (political-military and operational). Gissin's definition is used because it explains more thoroughly the contents of the concepts.
Today's British and American definitions, quite similar to the Israeli practice and to the definitions in general, can be seen in Paul Hardy's dissertation. He defines doctrine as "authoritative fundamental principles by which military forces guide their actions."

[17] Field Manual FM 100-5 Headquarters 100-5, Department of the Army, Washington, DC, 14 June 1993, http://www.atsc-army.org/cgi-bin/ atdl.dll/fm/100-5/100-5c6a.htm#LINK, 28.5.1998 at 08.25, Leonhard, Robert: The Art of Maneuver. Maneuver-Warfare Theory and AirLand Battle, Presidio Press, Novato CA 1991, p. 9, British Defence Doctrine (1996), Joint Warfare Publication (JWP) 0-01, MOD CS(M)G 1996, p. 1.9, Glantz, p. 13 and Tsouras, Peter, Watson, Bruce W, Watson, Susan M (ed.): United States Army. A Dictionary, Garland Publishing Inc., New York & London 1991, p. 104.

Usually tactics have also been related to the size of forces; an engagement is fought at division level or lower. These engagements may or may not develop into a battle. Battles occur when a division, corps, or an army fights for significant objectives. They may be short and fought in relatively small areas or they last several weeks and cover large areas. In small armies, like in the IDF, this interpretation has been proportioned to the size of the forces, i.e., even brigades can be operational, if their objectives are at that level.

Operational art

Clayton R. Newell provides the simplest definition of **operational art**. It is "the variety of measures how military commanders conducting war from the operational perspective balance the ends, ways, and means of war."[18] This is a good foundation for analysing the Israeli terms as well. Generally in Israel before the 1970s, strategy was quite near to today's definition of operational art. Liddell Hart's definition of strategy, also used in the forms of pure strategy or military strategy, meant a sound calculation and co-ordination of the ends and means. Mearsheimer confirms this and interprets Liddell Hart's definitions as follows: "Strategy is concerned with how all the major units of an army and its supporting tactical air forces are deployed and moved about the theatre of operations to achieve the overall campaign objective. Strategy, in other words, is concerned with the ways in which the different battles that comprise a campaign fit together to produce the desired military outcome." The connection between the Israeli definition and the British way of thinking becomes apparent in Leo Heiman's article. Heiman, who gives no name to this entity, sees the activities between tactics and war strategy as follows: "Actual command of the armed forces and the conduct of military, naval, and air operations, which were the responsibility of the Chief of the General Staff." This definition reveals that an operational entirety was understood in Israel at least to some extent, according to Colonel Shaul, already since the late phases of the War of Independence. Nevertheless, Heiman's definition doesn't fully explain activities between the General Staff level and the tactical level, i.e., activities that can be included in grand tactics.[19]

Before the 1950s this undefined operational entity can be seen in the Israeli manner of defining tasks for their combat formations. In Israel the different levels of warfare have not only been measured by the scale of the forces involved but, exactly as von Moltke had said, in terms of aims. This is apparent in the overall tasks assigned to Israeli brigades. In general, a brigade was seen as a tactical echelon engaged mainly in one task at a time. Nevertheless, the brigade was also defined as the primary force in the IDF. This means that it had the capability of carrying out the majority of tasks on the battlefield independently and for a defined period of time, usually a few days. By doing so, the Israelis measured – in a matter of fact way – operative goals in terms of

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[18] Newell, Clayton R: The Framework of Operational Warfare, Routledge, London 1991, p. 38 and 79.

[19] Heiman, Leo, War in the Middle East, p. 58 – 59, Mearsheimer, p. 16 and Liddell Hart, B. H: Strategy, second revised edition, A Meridian Book, New York 1991, p. 321 – 322 and interview of Colonel, Doctor Shai Shaul.

A Polish-born Israeli foreign press correspondent Heiman studied in the Soviet Union and fought during WW II with Soviet partisan forces against the German Army.

See also Rothenberg, Gunther E: The Anatomy of the Israeli Army, B. T. Batsford Ltd., London 1979, p. 77.

Rothenberg explains the role of the Chief of Staff in Israel. In the IDF, there did and still does not exist a Commander-in-Chief of the Defence Forces and therefore the Chief of Staff was defined as the sole executive head of the entire multi-service army. Because he was always chosen from the ground forces, there was no need for a separate ground forces commander.

their tactical formations. Apparently the lack of the term operational modified the practice. Although a brigade was defined as a tactical formation, the definition primary force gave it grand tactical goals, only an exact term for this didn't exist. Therefore, the overall task of a brigade was defined rather freely, but mentally the definition of the primary force can be linked to the operational level of warfare. In addition, before the introduction of a divisional echelon of command the brigades were the only formations to implement operational tasks.[20]

The Israeli definition of strategy also coincides with the general definitions of operational art today. According to the British and the American definitions, "at the operational level of war, joint and combined operational air, land, and naval forces within a theatre of operations perform subordinate campaigns and major operations, and plan, conduct, and sustain to accomplish the strategic objectives of the unified commander or higher military authority." The operational art can also be derived from the statements above as follows: "the disposition of forces, selection of objectives, and actions taken to weaken or out-manoeuvre the enemy in the battles and exploit tactical gains." In addition, these definitions of operational art reinforce, contrary to the field manuals in the first decades after WW II, that the intended purpose, not the level of command, determines whether a unit functions at the operational level. This also suits the Israeli definitions well where just the objective was the touchstone of the level of military art. Therefore, in this work the terms "strategy" and "operational art" are used in the same literal sense of the word, and if there is a need for exceptions they are mentioned.[21]

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[20] Avidor, Gideon: From Brigade to Division, Military Review, October 1978, p. 65 – 66 and 68 – 69.

See also Field Manual FM 100-5 Headquarters 100-5, Department of the Army, Washington, DC, 14 June 1993, http://www.atsc-army.org/c/s.dll/ atdl.dll/fm/100-5/100-5c6a.htm#LINK, 28.5.1998 at 08.25, Design for Military operations - The British Military Doctrine, 1989, p. 37, British Defence Doctrine (1996), p. 1.9 and Tsouras, Watson & Watson, p. 104.
It has not been unique to define the levels of warfare according to the aims. In large armies, however, quite usually tactics and operational art have also been related to the size of forces; an engagement is fought at division level and lower. According to this view, the border between the tactical and operational level of warfare – when measured by the size of a force – lies at the divisional level where a division can be both a tactical and operational force.
In addition, British field manuals mentioned that the term operational also describes a unit's military effectiveness as follows: "Unit X is operational, Unit Y is not."

[21] Newell, p. 79, Field Manual FM 100-5 Headquarters 100-5, Department of the Army, Washington, DC, 14 June 1993, http://www.atsc-army.org/cgi-bin/atdl.dll/fm/100-5/100-5c6a.htm#LINK, 28.5.1998 at 08.25, Design for Military operations - The British Military Doctrine, 1989, p. 37 and British Defence Doctrine (1996), p. 1.9.

See also Glantz, p. 10, Gay, Mark P: Soviet and US Operational Styles of War, Military Review, September 1985, p. 48 and Tiberi, Paul: German versus Soviet Blitzkrieg, Military Review, September 1985, p. 64.
Glantz, Tiberi and Gay all are U.S. officers. They give an overview of the Soviet concepts. In the Soviet Union, there was one difference with the Western definitions. Although the Soviets also stressed that it was the purpose that determined the level of the military art, they also connected the size of forces to their definition as follows: "Operational art encompasses the theory and practice of preparing for and conducting combined and independent operations by large units, i.e., fronts and armies."

The term **mobility** is linked to operational art because it is seen as the essence of conducting war from the operational perspective. Mobility can be defined as "a quality or capability of military forces which permits them to move from place to place while retaining the ability to fulfil their primary mission." By extension **mobile warfare**, also known as warfare of movement, occurs when "opposing sides seek to seize and hold the initiative by the use of manoeuvre, organisation of fire and use of terrain." These definitions coincide with the terms **manoeuvre** and **manoeuvre warfare**, which are the current terms for mobile warfare. Today, **attrition** or **attrition warfare** is generally seen as the opposite of manoeuvre. Attrition can be defined as "the reduction of the effectiveness of a force caused by the loss of personnel or equipment to enemy fire." However, the dividing line between manoeuvre and attrition is usually not so clear as can be seen in the following statement. At the operational level, manoeuvre is usually understood as the "employment of forces on the battlefield through movement in combination with fire, or fire potential, to achieve a position of advantage in respect to the enemy in order to accomplish the mission."[22]

The word manoeuvre also has a more philosophical interpretation, which fits well with the Israeli operational art. According to Fuller, a "grand tactician does not think of physical destruction but of mental destruction of the enemy. Instead, when the mind of the enemy's command can be attacked only through the bodies of his men, it is a question of minor tactics, which though related, is a different expression of force." In this concept, manoeuvre means the battle between two plans energised by two wills, and not so much the struggle between two or more military forces. The operational commander designs a campaign to attain the grand strategic goals, so that when the tactical forces fight their battles, they will concentrate against their opponent's weaknesses rather than pitting strength against strength. This way of thinking has characterised the Israeli art of war. According to Doctor, Colonel (IDF, ret.) Hanan Shai, at the operational level the aim is also to break the opponent's plan. In Israel this is called independent thinking. This means that small forces will also act at the operational level, if their action is directed against an opponent's plan. In addition, the idea of concentrating on the opponent's weaknesses is among the principles that are seen as the central pillars behind the manoeuvre warfare theory of today. The concepts of mobility and manoeuvre will be discussed in greater detail in chapter 1.[23]

Finally, the concept of the **centre of gravity** (COG) is key to all operational design. It derives from the fact that an armed combatant is a complex organism whose effective operation depends on the performance of each of its

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[22] Bellamy, p. 60 – 61, The Official Dictionary of Military Terms, second edition, Global Professional Publications, Washington 1992, p. 218 and 233 and Tsouras, Watson & Watson, p. 67 and 472.

[23] Fuller, J. F. C: The Foundations of the Science of War, Hutchinson & CO., London 1926, p. 96 – 97 and discussions with Colonel (IDF, ret.), Doctor Hanan Shai 8 and 25 May 2000 in Tel Aviv.

Doctor, Colonel Hanan Shai is a lecturer at several Israeli universities and other institutions. He is also a decorated veteran of the Yom Kippur War.

component parts and on the smoothness with which they implement the will of the commander. In Israel the revealing of the enemy's COG has, according to Shai, been central at all levels of warfare. In addition, this way of thinking is central in manoeuvre warfare. As with any complex organism, some components are more vital than others to the smooth and reliable operation of the whole. If these are damaged or destroyed, their loss unbalances the entire structure, producing a cascading deterioration of cohesion and effectiveness, which may result in complete failure and will invariably leave the force vulnerable to further damage. The COG of an armed force refers to the sources of strength or balance. It is that characteristic, capability, or locality from which the force derives its freedom of action, physical strength, or will to fight. Clausewitz defined it as "the hub of all power and movement, on which everything depends." Its attack is – or should be – the focus of all operations. Usually and more usefully the concept of COG is applied at the operational level, where the size of the enemy force and scale of its operations make it difficult to decide where and how best to attack it. Even at this level, the COG may be a component of the field force – the mass of the enemy force, the boundary between two of its major combat formations, a vital command and control centre, or perhaps its logistical base or lines of communication. Despite the tendency to understand the concept of the COG as a function at the operational level of warfare, it also exists, however, at the tactical and strategic levels. Tactical formations can and frequently have centres of gravity or **points of gravity** (e.g., a key command post or a key piece of terrain on which the unit's operations are anchored). At the strategic level, the COG may be a key economic resource or locality, the strategic transport capabilities by which a nation maintains its armies in the field, or a vital part of the homeland itself.[24]

Strategy

Leo Heiman examines the Israeli definitions of the military art in his article *War in the Middle East: An Israeli View*, Military Review, September 1967. According to Heiman, up to the 1970s the Israelis divided strategy into two parts: "grand strategy" and "war strategy". **Grand strategy** "combined the military effort with political, economic, psychological, and diplomatic campaigns and was the responsibility of the War Cabinet." **War strategy**, which "determined the general course of action, timing, and objectives of war", was handled by the Supreme Command Council, whose chairman was the Minister of Defence. These definitions coincide with Liddell Hart's grand strategy, which was, according to Mearsheimer, the relationship between military means and international commitments.[25] Heiman's manner of analysing grand strategy and war strategy reveals similarities with the British definitions at this time. On the whole, the Israeli ways of defining the levels of military art were, until the late 1970s quite similar to the British.

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[24] Tsouras, Watson & Watson, p. 109 and discussions with Doctor, Colonel Hanan Shai.

[25] Heiman, Leo, War in the Middle East: An Israeli View, Military Review, September 1967, p. 58 – 59, Ben-Horin, Yoav and Posen, Barry: Israel's Strategic Doctrine, Rand Publications Series, Santa Monica, California 1981, p. 1 and Mearsheimer, p. 17.

Other definitions

Combined arms and joint (activities)

The definitions of combined arms and of joint (activities) are also linked to the operational level of warfare. The generalisations below are made on the basis of the American definitions. They are also useful in the Israeli context. Universally, **combined arms** refers to the "synchronised use of two or more separate units of different type of weapons systems. Thus, the aim of combined arms tactics is to create a multiplier effect where the capacity of the combined arms team is greater than the sum of the units operating independently." The term joint (activities) is an extension of the previous term. **Joint** (activities) means "activities, operations, organisations, etc., in which elements of more than one service of the same nation participate." In many cases, combined arms and joint (activities) can be defined in a similar manner. The difference between combined arms actions and joint (activities) is that combined arms actions can only consist of elements of one service. Sometimes the level at which decisions are made has also been decisive in the definitions.[26]

In Israel, the term "combined arms", *Shiliv Kochot*, is relatively new. It was adopted after the Yom Kippur War to describe the post-1973 combat ethic of ground forces, especially the co-operation between armoured forces and infantry. Despite the lack of a definition, the principles of co-operation between different branches already existed earlier, although they mainly were not in balance in today's terms. Joint operations were implemented at the General Staff level between the War of Independence and the Yom Kippur War. Basically this was a question of the economical use of small forces. Already in June 1948 territorial commands, consisting of units of different branches of the ground forces, and commands for the Air Force and Navy were formed as commands under the General Staff. According to Netanel Lorch, this was done for three reasons: to co-ordinate every type of military operation closely with ground forces, to economise manpower and avoid duplication, and to streamline procurement and unify training methods to facilitate inter-service co-operation. However since the Yom Kippur War (inclusive), the Israelis have also conducted joint exercises at territorial command level.[27] Today, the definitions of joint and combined arms are closely linked together. In addition, since the 1960s a tendency of also favouring inter-service operations in counter-guerrilla and counter-terrorism operations can be seen, although to a lesser extent than in conventional warfare. This type of action can be called "small combined arms" operations: a term that approaches the U.S. definition of "compound war".

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[26] Tsouras, Watson & Watson, p. 136 – 137 and The Official Dictionary of Military Terms, p. 196.

[27] Lorch, Netanel: Shield of Zion. The Israel Defense Forces, Howell Press Inc., Charlottesville, VA, 1991, p. 56 – 57 and 59, Katz, Samuel, M: Follow Me! A History of Israel's Military Elite, Arms & Armour Press Ltd., London 1989, p. 140 and Luttwak, Edward and Horowitz, Dan: The Israeli Army, Allen Lane Penguin Books Ltd., London 1975, p. 97.

Compound War

The Americans define "the combination of conventional warfare and counter-guerrilla warfare" as **compound warfare**. The Vietnam War, the Soviet war in Afghanistan and Israel's war in Lebanon were wars of this type. This definition is also linked to the terms insurgency and counter-insurgency, whose definitions will be discussed later in this chapter.[28]

Conventional warfare

Conventional war is "an armed conflict without the use of nuclear weapons." Generally the use of biological and chemical weapons are also excluded in conventional warfare. In Israel, nuclear weapons are not a self-evident fact. Their role is seen as minimal; in conventional war, in low-intensity conflict, or in a war of attrition. According to Professor Handel, nuclear weapons are the "ultimate guarantee" for Israeli strategists.[29]

Mid-intensity conflict

According to both Robert Leonhard and Clayton Newell, the crises of the Middle East illustrate the phenomenon of mid-intensity conflicts. **Mid-intensity conflict** can be described as "classical or traditional warfare to a degree, where organised military forces confront each other in relatively well-defined and organised theatres of operations."[30]

Low intensity conflict (LIC)

Low-intensity conflict is defined as "a limited politico-military struggle to achieve political, social, economic, or psychological objectives." Close to this definition are both the terms **revolutionary warfare** and **insurgency**. Low intensity conflict is often protracted and ranges from diplomatic, economic and psycho-social pressures through terrorism and insurgency. Low-intensity conflict is generally confined to a geographic area and is often characterised by constraints on the weaponry, tactics and the level of violence. Counter-measures in low intensity conflicts are called counterinsurgency or counter-revolutionary warfare. **Counterinsurgency** and **counter-revolutionary warfare** consist of "military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency." Therefore, in a counterinsurgency operation, firepower – and particularly antitank firepower –

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[28] Discussions with Doctors Christopher Gabel and Robert Baumann in Fort Leavenworth, Kansas in 13.11.1997. Both men are researchers at the Combat Studies Institute and instructors at the U.S. Command and General Staff College in Fort Leavenworth.

[29] United States Army Dictionary (1991), p.166 and Handel, The Evolution of Israeli strategy (1994), p. 553.

[30] Leonhard, p. 232 and Newell, p. 21.

The Korean War and Iran-Iraq War are also typical examples of mid-intensity conflicts in modern warfare.

is of less importance than the imperative of finding the elusive enemy and bringing him to battle.[31] These definitions are also sufficient to describe the Israeli peace-time paramilitary threat, including the Palestinian *Intifada* uprising since 1987. Because of the wider social dimensions of low intensity conflicts, purely military counter-measures, even including the use of special forces, have proved to be inadequate in this type of threat.

The means of **unconventional warfare** are closely linked to low intensity conflicts. The *Joint Chiefs of Staff Military Terms Dictionary* defines unconventional warfare as follows: "A broad spectrum of military and paramilitary operations conducted in enemy-held, enemy-controlled or politically sensitive territory. Unconventional warfare includes, but is not limited to, the interrelated fields of guerrilla warfare, evasion and escape, subversion, sabotage, and other operations of a low visibility, covert or clandestine nature. These interrelated aspects of unconventional warfare may be prosecuted singly or collectively by predominantly indigenous personnel, usually supported and directed in varying degrees by (an) external source(s) during all conditions of war or peace." **Guerrilla warfare** is defined almost identically as "military and paramilitary operations conducted in enemy held or hostile territory by irregular, predominantly indigenous forces." Counter-measures in unconventional warfare are termed **counter-guerrilla warfare**, which includes operations and activities conducted by armed forces, paramilitary forces, or non-military agencies against guerrillas. These definitions are also suitable in Israel's case.[32]

Finally, there is the definition of terrorism. Generally **terrorism** is defined as "the unlawful use or threatened use of force or violence against individuals or property to coerce or intimidate governments or societies, often to achieve political, religious, or ideological objectives." The Israelis also include violence against military objectives – i.e., against personnel and materiel – in peacetime in their definition of terrorism. Correspondingly **counter-terrorism** consists of "offensive measures taken to prevent, deter, and respond to terrorism." Israeli counter-measures are officially described as being directed against only military targets, but increased use of force has occurred occasionally.[33]

Methods

A Finnish professor and authority on military history, Matti Lauerma, describes the history of the art of war as the cultural history of warfare, which examines phenomena that have been typical of warfare or been an impetus for further

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[31] Joint Chiefs of Staff Military Terms Dictionary CD-rom, Dictionary of Military Terms, p. 93 and Leonhard, p. 225.

[32] Dictionary of Military Terms, p. 161 and 383.

[33] Dictionary of Military Terms, p. 94 and 370 and Feldt, Mikael: Israelin sotilaalliset vastatoimet Intifadan kukistamiseksi Länsirannalla ja Gazassa (Israel's Military Counter-Measures to Thwart the Intifada in the West Bank and Gaza Strip), a study from the General Staff Officer Course, National Defence College of Finland, Gummerus Kirjapaino Oy, Saarijärvi 1997, p. 15. (Original in Finnish, contains an English summary).

development.[34] According to this framework, this study can be placed in areas of history, the history of ideas and the military sciences, which do not form separate entities but overlap. History as a science has held a central role and provided the basic tools to approach the subject. Thus, primary sources – in so far as they have been available – have formed the skeleton of the study and their role has been important in placing the events in logical order. Therefore, the research problem is also approached in historical-chronological order. The analysis of the development of Israeli military thinking, especially in the long run, demanded, however, strategic, operational and tactical analyses. Nevertheless, these analyses were also conducted in a historical context and were mostly qualitative. In this way, the method of approaching Israeli military thinking resembles the study of the history of ideas, and further on, reinforces Professor Lauerma's views of the role of the history of the art of war in the discipline of history.

The main method of this thesis, as described above, has been historical-descriptive longitudinal analysis. However, other methods have also been used to a lesser degree. The abundance of sources makes the (random) study of the art of war difficult. Therefore, a systematic plan is needed so that maximum benefit can be achieved. Professor Robert E. Harkavy, a specialist in national security policy, arms control, and U.S. foreign policy, analyses this dilemma in his article *The Lessons of Recent Wars: Toward Comparative Analysis*. According to Harkavy, methodologically the "lessons learned" or "insights gained" can be seen as various dimensions of the familiar "levels of analysis" problem, among others things:

- various time perspectives or temporal vantage points,
- differing national or sub-national perspectives on lessons learned,
- ideological perspectives,
- negative versus positive lessons,
- the role of leadership,
- the application of "time-tested principles" – for instance, the use of Clausewitz as a checklist,
- a spectrum running from macro- to micro-level approaches to lessons learned – grand strategy, grand tactics, operational levels, small unit tactics and so on.

In this context there is cause to restate professor Harkavy's statement on the difficulties of studying the art of war from the operational point of view. This was that usually only military officers – and perhaps a few professional historians and social scientists – can operate at the levels of grand tactics and even smaller-scale tactics. Therefore, according to him, different scholars will generally prefer to focus on more than one level of the list above and maybe not on purely military issues.[35]

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[34] Lauerma, Matti: Sotahistorian tutkimuksen problematiikkaa ja metodiikkaa (Research Problems and Method in Military History), Tiede ja Ase n:o 35/1977, Suomen Sotatieteellisen Seuran vuosijulkaisu, Pohjois-Karjalan Kirjapaino Oy, Joensuu 1977, p. 74. This article is published in the annual of the Finnish Society of Military Science.

[35] Harkavy, p. 5 – 6 and 8.

Professor Harkavy and his colleague Dr. Stephanie G. Neuman, also consider the question of what is a lesson. To some scholars the term implies "conclusions about cause-and-effect relationships in warfare" but according to Harkavy and Neuman lessons can be learned both from questions and from answers. This remark is important, especially if the sources are of an uneven quality or quantity or if the relevant source materiel is not available at all. In addition, according to Professors Harvey Starr and Benjamin A. Most, the "lessons learned" can be approached from any of three distinct methodological angles: case studies or the cross sectional approach, comparative analysis and longitudinal analysis. However, most of these methods are empirical and in the case of soft data sources (literary sources and interviews) must therefore be applied in a different manner with combinations of other methods and techniques. Social theory is a viable one, especially when common and separate traits of some phenomenon are studied. In this regard, Professor Peter Burke sees that it is useful to construct some models to simplify reality to find out typical traits of a phenomenon, though in the meantime he also warns that the researcher should be aware that the different backgrounds of the issues that are compared limit the possibility of making generalisations. In addition functionalism, i.e., the description and interpretation of the function of customs and institutions, is also, according to Burke, a commonly used method among historians. This provides a possibility to explain events in the past in a certain political and social framework. In addition, in this context it is also possible to explain the change between the starting point and the outcome, especially if the influence behind the phenomena has been external. Functionalism provides a means to replace the items that have been analysed in the research process in their logical context.[36]

In this thesis, the case study method is used as a means to provide a collection of data. Differences and similarities between the military theories and the applications have been studied by using comparisons. This means that some central military theories have been analysed and modelled to find out the characteristic traits that have then been compared to the existing Israeli practise. The change and the different conditions behind the phenomena have been taken into consideration by examining the framework of the military art over a long-term interval. In the synthesis, the descriptive information has then been put in chronological or functional order with a more thorough longitudinal

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[36] Neuman, Stephanie G: Summary of Lessons, Harkavy, Robert E. / Neuman, Stephanie G. (ed.): The Lessons of Recent Wars in the Third World, Volume I, Approaches and Case Studies, Lexington Books, Massachusetts/Toronto 1985, p. 281 – 282, Starr, Harvey and Most, Benjamin A: Patterns of Conflict: Quantitative Analysis and the Comparative Lessons of Third World Wars, Harkavy, Robert E /Neuman, Stephanie G. (ed.): The Lessons of Recent Wars in the Third World, Volume I, Approaches and Case Studies, Lexington Books, Massachusetts/Toronto 1985, p. 34 – 35 and 38 and Burke, Peter: History & Social Theory, Polity Press, Oxford 1992, p. 22 – 31, 104 – 105, 107, 109, 130 – 131 and 144 – 145.

Dr. Neuman was a senior research scholar at Columbia University's Research Institute on International Change in 1985, and the director of the Comparative Defense Studies Program.

Harvey Starr was professor and chair of political science at Indiana University in 1985 and Benjamin A. Most was associate professor in the Department of Political Science at the University of Iowa.

In the early 1990s Peter Burke was Professor of cultural history at Cambridge University.

analysis, which has been used to analyse the development of the Israeli operational doctrine during the years of independence. The role of the cross sectional approach was to produce more detailed information on the operational practise in times of change and during wars, which can be seen as laboratories of doctrine. Finally, with historical description the central elements of operational mobility have been put both in functional and in chronological order within the doctrinal framework.

Because interviews play a central role in this study, the methods of oral history require some explanation. Interviews are, according to Jan Vansina, the only way to construct a picture of the past if documents do not exist or if they are not available. However, if other sources also exist, interviews should not be used as the only source. The validity of oral sources has generally been underestimated by historians because it was, and still in some circles is, thought that the interviewees change the truth. This assumption has been proved to be wrong. Scholars that have studied and used oral sources in their research – David Thelen, Kristiina Graae and Marjatta Hietala, for example – share the opinion that in an interview, instead of re-processing, interviewees try to recall issues from their memory. Therefore, the information of this process is authentic evidence of the experiences and feelings of the interviewee. Nevertheless, the information is not an accurate description of the past, and if the information comes from the distant past, there is a possibility that it has been receptive to change, especially if the subject has been in the limelight after it occurred. Besides, it should be remembered that interviewees recall issues, consciously or unconsciously aware of their own viewpoint, which additional is prone to personal, social and cultural influence. This all could, however, be avoided if the interviewer is familiar with the larger framework of the subject that he studies. In addition, according to Paul Thompson, oral history should be used, not as the main method but as a technique to enliven the past. Thompson, however, sees oral history as useful especially in social history and in the history of ideas where interviews can be used to study the backgrounds behind the *fait accompli*. Oral evidence can also provide information on organisations and people and on their backgrounds and motives in the areas of political and military history. This becomes more obvious if documented sources are not available. Anthony Seldon and Joanna Pappworth also stress the validity of oral history in contemporary history when there are gaps or irregularities between the documented sources. In this case, by interviewing persons that have been central to the process that is studied, the researcher could picture the past and in this way study the process of change and try, by systematic analysis, to reach an even more general conclusion.[37]

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[37] Vansina, Jan: Oral Tradition. A Study of Methodology, Aldine Publishing Company, Chicago 1961, p. 1 and 8, and 75 – 76, Thelen, David (ed.): Memory and American History, Indiana University Press, Bloomington and Indianapolis 1990, p. vii, ix, xiii, 72, 138, 147 – 148 and 176 – 179, Graae, Kristiina ja Hietala, Marjatta: Suullista historiaa. Veteraanikansanedustajat haastateltavina (Oral History. Veteran Members of Parliament Interviewed), Painatuskeskus Oy, Helsinki 1994, p. 71, Thompson, Paul: The Voice of the Past. Oral History, Oxford University Press, Oxford 1988, p. 2, 5, 72 and 82 and Seldon, Anthony and Pappworth, Joanna: By Word of Mouth. Élite Oral History, Methuen & Co. Ltd., London 1983, p. 7, 43 – 45, 57 and 167 – 168.

In this study, interviews have been used for three purposes. Firstly, interviews of people who have taken part in the development of the IDF – in one way or another – were used to find out new information on the backgrounds of a number of different issues. Secondly, the group of former commanders represents contemporaneous experience that supports or overturns the picture that is formed from the other sources. Thirdly, the information from the interviews of the specialists has been used to fill in missing links between the separate items of this study that have not been found in written sources. In addition, the interviewees – military men, scholars and both – represent a part of Israeli society, both past and present. This has also provided an opportunity to assess different opinions of the role of the military art in Israel.

There are several models of research on operational art after WW II. The methods that are used are based in many ways on similar considerations to those presented above. The tendency to examine warfare from the viewpoint of the levels of military art is quite common. This way of thinking provides a broad if somewhat abstract model to analyse warfare, and though the view from these perspectives may be infinite in their variety, the advantage is that the perspectives do remain constant, as Clayton Newell notes. This gives the researcher a framework to organise the abundance of detailed information. In other words, a theoretical framework, which examines the planning and use of armed forces to achieve national goals, provides the basis for a theory of war. Understanding the strategic, operational, and tactical perspectives of warfare is, however, a prerequisite to further analysis of organising the details of the problem. After this, according to Newell, research can concentrate on the questions and answers of the situation, objective, conduct, support, and control of the war. This method coincides with the thoughts of Professor Harkavy and Dr. Neuman. Newell only specifies the means; in his concept each of the five elements shown above must be analysed from each level of the military art in the appropriate order to find out the interactions between these factors. This means that questions must be put in the correct manner so that, in each case, the situation forms the basis for a militarily achievable object, which determines the way that the war is conducted, sets demands for the necessary support, and maintains control over the war.[38]

The most illuminating example of the type of research described above is David Glantz's study *Soviet Military Operational Art*. The similarities to Newell's method are striking, which is no wonder because, in the late 1970s after the traumatic experiences in Vietnam, Americans began to intensively study the wars of the past. Glantz bases his work on Soviet research of the history of warfare and the military art. The Russians have studied war within an overall multi-scientific framework, which has helped explain historical processes. According to Glantz, this manner of thinking, which has no Western counterparts is, beneath the theory and rhetorical surface, a tough-minded, practical and comprehensive analytical process for understanding and exploiting the dynamics of war. By design, the main problem of Glantz's study is the development of operational art, which is analysed both functionally and chronologically. For continuity's sake, the evolution of operational art is

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[38] Newell, p. 33 – 35 and 149.

connected to strategy and tactics, which have provided it with direction, form and meaning. In addition, a survey of the force structure is included in the study to give depth to the cause-effect analysis.[39] Glantz's and Newell's methods have proved, in addition to historical-descriptive analysis, to be the most useful methods for this thesis.

Research works similar to those described above have not been published about the Arab-Israeli wars. However, the problem of studying the wars of the past was already recognised in Israel in the early 1960s. On the occasion of Liddell Hart's visit to Israel in 1960, Doctor Israel Beer, an Israeli politician and scholar, considered the research of military art in the Israeli newspaper *Ha'aretz* as follows: "The lessons of wars from the earliest time until today prove, that the decision between conceptions and ideas not only preceded the decision on the battlefield but, in most cases even determined it. It is true that the translation of theory into practice in the military field is a difficult, prolonged and sometimes dangerous process. This science has neither laboratories nor experiments to test an idea and to prove its correctness in an irrefutable manner, before such an idea shapes the defence establishment of a nation. In modern times establishments of that kind are based on numerous factors: technical, scientific, political, economical, ideological and many others – only an accurate assessment of all these factors together and their mutual interdependence can determine correct strategy, organisation and use of the armed forces."[40] This opinion is interesting, because if inverted it coincides with Glantz's method; i.e., if the art of war has been developed in a certain manner, it can be studied the other way round, which is just posing questions and arranging answers.

Sources

The fact that the documentation that would normally be used for a historical study is still not more than partly available has already been stated. However, since this study looks at the patterns of warfare and not the details of different wars, this problem should be manageable. In addition, it seems that in the documentary primary sources there are very few references to other documents that reveal the thinking behind the adopted solutions. More of this kind of philosophical consideration can be found in memoirs and other published sources that also include, among other sources, interviews of Israeli political and military leaders. According to this, the sources of this thesis are divided as follows:

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[39] Glantz, p. xxiii and 1 – 2.

The models for Glantz's study are A. A. Strokov's and M. M Kirian's works *Istoriia voennogo iskusstva* (a history of military art), published in 1966 and 1984 and *Istoriia voin I voennogo iskusstva* (a history of war and military art), edited by I. Kh. Bagramian and published in 1970. Rhetoric in this context means theoretical precepts as "inevitable victory," "moral superiority," and the classification of "just and unjust wars".

[40] Beer, Israel: The Role of Military Commentator, Ha'aretz, 25 March 1960, LH 15/5/304, part 2, p. 1.

- Studies carried out at several universities and military academies, mainly in the United States. This category consists of a few dissertations dealing with the development of military theories and doctrines and smaller studies on different subjects of warfare in the Middle East. The most important of the former have been: Paul Dyster's dissertation *In the Wake of the Tank: The 20th-century Evolution of the Theory of Armoured Warfare* (1988), which provides a view on the development of armoured warfare; Paul Herbert's *Toward the Best Available Thought: The Writing of Field Manual 100-5, "Operations" by the United States Army, 1973 – 1976* (1988), analysing the overall theoretical background of doctrinal development; Anthony H. Cordesman's and Abraham R. Wagner's *The Lessons of Modern War, Volume I: The Arab-Israeli Conflicts, 1973 – 1989* (1990), which analyses in detail tactical, operational and technical data of the Middle East wars in 1973 and 1982; and Raanan Gissin's thesis *Command, Control, and Communications Technology: Changing patterns of Leadership in Combat Organizations* (1988), which offers insights – though of a quite specific scope – on the Israeli way of thinking in the operational art. From the rather numerous studies that concentrate on certain subjects of warfare in the Middle East, the following can be mentioned: Nigel T. Bagnall's *The Israeli Experience. A Study of Quality* (1973), which provides a view on several elements behind the IDF's operational performance, and George Gawrych's *Key to the Sinai: The Battles for Abu Ageila in the 1956 and 1967 Arab-Israeli Wars* (1990) and *The 1973 Arab-Israeli War: The Albatross of Decisive Victory* (1996), which together provide views on the IDF's organisation and planning in certain operations during the 1956, 1967 and 1973 wars. In this source group, all the above mentioned studies include some sort of primary sources like archive material or interviews. The rest are mostly made up of secondary sources. Therefore, these studies contain rather a lot of operational analyses that are viable in this research work.
- Memoirs of Israeli military leaders. These works have been used to analyse the thinking and perspectives of different people who have been responsible for developing the operational doctrine or have played a key role in that process. This group contains the autobiographies of Moshe Dayan, *Diary of the Sinai Campaign* (1966) and *Story of my Life* (1976), Yitzhak Rabin's *The Rabin Memoirs* (1979) and Ariel Sharon's *The Warrior* (1989) as well as Yigal Allon's *The Making of Israel's Army* (1970). Christopher Sykes' biography *Orde Wingate* (1959) and Michael Bar-Zohar's *Ben-Gurion* (1977) also have extra value in surveying the backgrounds of the principles in the Israeli military doctrine. Christopher Sykes was a British Middle East specialist who was educated at Oxford and the Sorbonne in Paris and served in WW II in the Middle East and Persia and also in the Special Air Service. Doctor Michael Ben-Zohar is an Israeli scholar who has written several books on Ben-Gurion and also on the Israeli wars. All these sources should be – and have been – used with an understanding of the rules of oral history.
- Literature and articles concerning the Arab-Israeli wars. This wide range of sources includes military and military-political books concentrating either on individual wars and topics or on wider subjects of military history in the Middle East. A great number of these books, written by both Israelis and foreigners, are written in English, which means that significant Israeli works

originally published in Hebrew have usually been translated at least into English. Excluding Hebrew literature, only a few books are written in other languages. Several works in this category also fulfil the scholarly demands of having a note apparatus, which, however, further on reveals that some sources – like Luttwak's and Horowitz's *The Israeli Army* – appear repeatedly in lists of references and in bibliographies. On the whole when considering the literature written on the wars of the Middle East, the question of the reliability of the evidence is not a serious problem. Outside the books equipped with notes the quality of the rest varies greatly and they may also be less reliable. Realising this, the latter mentioned have, however, been used to fill in gaps in the information of the other sources.

Articles in the military professional annuals and magazines represent a wide variety of issues in military history and the art of war extending from theories to battlefield practice. Although not comprehensive in their scale, they include a lot of information on warfare both from the purely military point of view but also including the wider context of the military. Methodologically their value as a source can be seen as being between studies and literature. In this thesis, military annuals are used both to collect basic information about the wars of the Middle East and to provide the perspective of military thinking, and also to fill in the gaps between other sources. In the scope of the subject of this work, the articles of the American military annual *Military Review* form the major part of the article sources. Writings dealing with the subject of this study and published outside the United States seem to be rare.

- Literature concerning the theory of the art of war and its history. The main sources in this group are books related to the concepts of manoeuvre warfare and armoured warfare. This category of sources is used in two ways: first to analyse the contemporaneous thoughts of the theoreticians of mechanised warfare in the 1920s and 1930s. This can be best seen in Liddell Hart's and Fuller's works, as well as in the autobiography of General Heinz Guderian and in the biography of Field-Marshal Bernard Law Montgomery. The second purpose has been to survey the development of mechanised warfare after WW II to shed light on the continuity in the pursuit of mobility and judge the disputes linked to the origins of mechanised manoeuvre warfare. This point of view is taken into consideration in the following works: Richard Simpkin's *Race to the Swift: Thoughts on Twenty-First Century Warfare* (1985); Christopher Bellamy's *The Evolution of Modern Land Warfare: Theory and Practice* (1990); Clayton R. Newell's *The Framework of Operational Warfare* (1991); and Robert Leonhard's *The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle* (1991). Excluding the literary works of Liddell Hart and Fuller, which are especially used to show the originality of their thought, the most important sources to examine the different opinions related to Liddell Hart's and Fuller's thoughts are Brian Bond's *Liddell Hart. A Study of his Military Thought* (1977); John Mearsheimer's *Liddell Hart and the Weight of History* (1988); Brian Holden Reid's *J. F. C. Fuller: Military Thinker* (1987); and Kenneth Macksey's *The Tank Pioneers* (1971).
- Unclassified archive material. In this thesis this group of sources consists of documents and other sources of the IDF and Defense Establishment

Archive in Tel Aviv, the Liddell Hart Centre for Military Archives at King's College in London and the Public Record Office in London.

- The IDF and Defense Establishment Archive

  This group of sources consists of documents of the IDF General Staff, the Armoured Corps, the Air Force and some other echelons between the years of Israel's independence and 1958. In the spring of 2000, more recent archival documents were not as yet in public use. The sources of the IDF archive have been used in two ways. Firstly, the documents have been sources of new information on numerous details concerning the everyday life of the IDF both during peace and wartime. Secondly, the documents have been a means of verifying already written sources that do not have a reference apparatus, because they were based on secondary information or because security reasons prevented the publication of the exact sources.

- The Liddell Hart Centre for Military Archives

  The collections of the Liddell Hart Centre for Military Archives that have been used can be divided into three parts: Liddell Hart's correspondence with Israelis, the Orde Wingate files consisting of different material from memorandums and articles and files on the Middle East, which include correspondence and a large variety of different articles.

  Liddell Hart's correspondence with the Israelis extends from 1951 to 1969. For some reason, this file is rarely used in research. The explanation might be that up to Liddell Hart's death in 1970, the papers were in Liddell Hart's private archive and only since then has this large collection been organised for limited public use. This correspondence contains not only the letters received from Israeli military leaders but also copies of the letters sent and gives the researcher a possibility to follow the discussions between Liddell Hart and the Israelis and therefore also offers a perspective on the thinking of Liddell Hart and the Israelis in the context of the military art.

  The Orde Wingate files contain several memorandums sent by Captain (later Major General) Wingate to Liddell Hart and a substantial number of different articles on Wingate's career. The memorandums have provided primary information on Wingate's thoughts and to a limited scale also of the daily life of his Jewish force, the Special Night Squads. Secondly, the spectrum of articles – although less scientific – have provided much information on detailed issues linked to Wingate's life, especially in Palestine and in addition this material has been used to fill in the gaps of other sources.

  The files on the Middle East are the largest part of the collections in the Liddell Hart Centre for Military Archives that have been used in this study. These files include correspondence with authors and editors who were involved in the Arab-Israeli wars, published and unpublished memorandums concerning military matters in the Middle East and plenty of articles from newspapers and magazines dealing with Israel and its

defence forces. Like the Wingate files, the Middle East files have been useful in filling in the gaps of other sources.

- The Public Record Office

  The role of the sources of the Public Record Office is rather small. There are two reasons for this. First, although the British and the Jews have a common past in Palestine between the end of WW I and May 1948, documents in which the British have studied the Israeli military art are rare. Some information on the Sinai Campaign of 1956 does exist because both Israel and Great Britain committed their forces in this campaign, but the role of this group of sources in this study has not been decisive. Second, because Israel's operation in 1956 was mostly separated from the Anglo-French offensive, the reports concerning Israel are limited to some overall estimates of the results that Israel was able to achieve against the Egyptians. Assessments of the Israeli military art and its backgrounds in these sources cannot be found. An equivalent situation also exists in the case of the other military archives – like the French or American.

- Interviews. The list of the interviewees consists of several former Israeli senior commanders, officers in the background of the development of the Israeli military art and some other individuals who can be classified as being specialists in the subject of this study. The interviewees are people who have been able and willing to provide information. Despite this seeming limitation, the chosen interviewees, both civilian and military personnel, represent the theme of this work rather extensively. The list of the interviewees can be found in the source list and their *curriculum vitae* in the notes.

The reader must still be aware of one issue, the problem of transliteration. This is related both to geographical names and the names of different organisations. Although some might find that the transliterations from Hebrew and Arabic are not always consistent, simpler and more readable versions have been used for consistency's sake. In addition, Hebrew acronyms have been treated as English ones. The acronyms have been written in capital letters followed by the real names and their possible translations or explanations in brackets, the real name is in italics; for example, PALMACH (*Plugot Mahatz*, strike or shock companies).

1. THE 20th CENTURY CONCEPT AND PRACTICE OF MOBILE WARFARE

An analysis of the ideas behind mobility and the concept of armoured warfare in the 20th century is a precondition for further examination of the origins and application of the Israeli operational art. The concept of operational mobility is not new. William S. Lind, an American scholar and military advisor, dates manoeuvre warfare (mobile warfare) to the time when a caveman surprised his enemy instead of meeting him club-to-club. The basic idea of manoeuvre warfare has been that when a side is weaker, mainly in terms of manpower and firepower, it is not possible, from an operational point of view, to adopt defensive principles. In manoeuvre warfare the purpose of manoeuvre is to achieve a favourable situation that makes an enemy unable to continue fighting. In this model, the opponent is pinned down with a small holding force while the best forces are levelled against the enemy's weaknesses, rather than pitting strength against strength. The final objective is to finish the war quickly and save resources.[41]

Mobility was also one of the key themes of Sun Tzu, a Chinese military leader who lived circa 500 B.C., though only at a mental level. According to Sun Tzu, the best war policy was to strike an opponent's strategy and to defeat the enemy without fighting. If this fighting technique was not successful, the armed forces could be let loose and then the purpose of the fight was to end the war as quickly as possible and without causing unnecessary losses. Sun Tzu's thinking on the final aim of a campaign or war can be seen in his text: "To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the supreme excellence." Sun Tzu, who saw advantages both in defence and offence, stressed the significance of superiority. Invincibility in his thinking was based on defence and the possibility of victory was based on offence. Nevertheless, despite his emphasis on superiority, Sun Tzu also saw possibilities for the weaker side if its troops were well-trained and ready for battle. This concept and the strategic and tactical doctrines that Sun Tzu developed in *The Art of War* link him to the concepts of manoeuvre warfare. These doctrines were based on deception, indirect approach, a readiness to adjust to the situation, flexible and co-ordinated deployments and command systems, and on rapid concentration of forces on enemy weaknesses.[42] In addition, Sun Tzu already used the word manoeuvring. This occurs in Samuel Griffith's translation of *The Art of War*, where Sun Tzu says, "He who knows the art of the direct and the indirect

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[41] Lind, William S: Maneuver Warfare Handbook, Westview Press, Boulder Colorado and London 1985, p. 4 and 73 – 75.

In the 1970s, William S. Lind was an advisor on military affairs to U.S. Senator Gary Hart, who was the President of the Military Reform Institute and Resident Scholar at the Institute for Government and Politics of the Free Congress Foundation.

[42] Sun Tsu: Sodankäynnin taito, a Finnish translation of Samuel B. Griffith's English translation of The Art of War in 1963, WSOY, Juva 1998, p. 20, 26, 49, 86, 89 and 93, Sun Tzu: The Art of War, translated by Samuel B. Griffith, Oxford University Press, N.Y. 1963, p. 85 and 106 and Leonhard, p. 28.

Leonhard's text is based on Sun Tzu, Art of War, quoted in Tao Hanzhang, Sun Tzu's Art of War: The Modern Chinese Interpretation, New York: Sterling Publishing Co., 1987, p. 15.

approach will be victorious. Such is the art of manoeuvring." On the basis of these principles a German researcher, Lieutenant Colonel Gertman Sude, has drawn up a list of several parameters and rules that were to be taken into account in conventional warfare in Sun Tzu's writings. They are as follows:

- Invincibility lies in the defence, the possibility of victory in the attack.
- Know the enemy and yourself.
- Strike only when the situation ensures victory.
- Strike the enemy where he is least prepared.
- Weigh the situation before moving.
- Be flexible.
- Recognise the hazards and the weather.
- Deceive the enemy.
- Surprise the enemy.
- Separate the enemy from his allies.[43]

1.1. Early 20th century thinking on mobility

Sir Basil Henry Liddell Hart and Major General J. F. C. Fuller represent the 20th century interpretation of mobile warfare during the inter-war period in the 1920s and 1930s. Both men are often connected to the German *Blitzkrieg* doctrine and also to the Israeli art of war, Liddell Hart in particular. Therefore it is necessary to examine their thoughts in this context in greater detail. According to Brian Holden Reid, Liddell Hart and Fuller were not partners; rather they were collaborators who extended each other's ideas. Brian Bond confirms this. Originally light infantrymen, Liddell Hart and Fuller concluded that to avoid the stalemate or attrition of modern war, it was necessary to do more than just improve infantry techniques. Therefore, they demanded a revolution in military thinking. Nevertheless, the adoption of the tank and other armoured vehicles was not in itself the solution. The role of new weapons technology, especially that of the tank, should be expanded from its role as support weapons to higher levels of warfare, in other words from tactical support functions to operational use. Liddell Hart and Fuller both saw the development of independent armoured forces, capable of operational and even strategic envelopment, as a decisive and effective means of waging war. The same basic facts could also be connected to naval power. Later they, and especially Liddell Hart, stressed the role of air power as well.[44]

The common conception is that Fuller advocated an all-tank army, while Liddell Hart called for mechanised forces that also incorporated other combat arms, including the air force. In addition, it is thought that Liddell Hart understood the importance of deep strategic penetration in his famous theory the "Strategy of Indirect Approach", while Fuller favoured deep tactical

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[43] Sude, Gertman: Principles of War in Brassey's Encyclopedia of Land Forces and Warfare, Brassey's, Washington and London 1996, p. 856.

[44] Holden Reid, Brian: J. F. C. Fuller and B. H. Liddell Hart. A Comparison, Military Review May 1990, p. 67 and 69 and Bond, Brian: Liddell Hart. A Study of his Military Thought, Cassell & Company Limited, London 1977, p. 28 – 29.

penetration. The truth is that the origins of these ideas are difficult to determine. Although Liddell Hart's idea of deep strategic penetration can be interpreted as also extending outside the deployments of armed forces to civilian rear areas and to the mental level of warfare, in most cases Liddell Hart and Fuller were discussing the same matters. They only used different terms. However, it seems likely that Fuller understood the operational level of warfare better. He saw the usefulness of manoeuvre as a link between the tactical and strategic levels of warfare in actual operative terms, while Liddell Hart conceived of manoeuvre as a sum of tactical battles in his inter-war writings. Fuller's principles of war and his operational principles as well as the tactical principles of Liddell Hart are presented in Appendix 1.

John J. Mearsheimer, who has also compared the similarities and differences of Liddell Hart and Fuller, states that "a careful examination of their writings produced no evidence of differences in their thoughts." In any case, Mearsheimer questions Liddell Hart's ideas on deep penetration; i.e., his influence on the operational art before WW II. According to Mearsheimer, Liddell Hart did not understand indirect approach as a *Blitzkrieg* style strike against the vulnerable command and control network of an enemy; rather he saw it as strategic attacks against an opponent's home front. However, it is obvious that Liddell Hart did not lose the important distinction between the levels of warfare. This is revealed in *The Future of Infantry,* published in 1933, where Liddell Hart emphasised the idea of the use of motorised infantry in strategic movements. Nevertheless, Liddell Hart also mentions in this book that the dividing line between strategic and tactical levels can never be clearly drawn. This again shows that Liddell Hart did not understand the operational level of warfare as an independent entity before WW II, as Fuller obviously did and as we do now. According to Mearsheimer, Liddell Hart sought the opinions of others and took their comments seriously, especially Fuller's. Finally, Mearsheimer goes so far as to state that Liddell Hart manufactured the differences between himself and Fuller after WW II by saying that "Liddell Hart wrote that his idea of the deep strategic penetration was the central element in the German *Blitzkrieg* and Fuller's all-tank army concept was a fundamentally bad idea." Brian Holden Reid is not so harsh. In his comparative article on Liddell Hart and Fuller, Holden Reid notes that while Liddell Hart was a skilled writer, he sometimes lacked self-confidence; thus Liddell Hart consolidated his early writings several times. In any case, men who have sought to rewrite history have rarely succeeded in the long run and this has obviously been the main reason why Liddell Hart has become controversial.[45]

However, the real differences in the thinking of Fuller and Liddell Hart are in their philosophical approach to warfare. In addition, the criticism of Liddell Hart is not directed at his "Strategy of Indirect Approach" because it is obviously a vague and elastic theory. The "Strategy of Indirect Approach" was first presented in 1929 in Liddell Hart's book *The Decisive Wars of History*, but the main conclusions are summarised at length in Liddell Hart's *Memoirs,* published in 1965. According to Robert Leonhard, Liddell Hart used the term

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[45] Mearsheimer, John J: Liddell Hart and the Weight of History, Cornwell University Press, New York 1988, p. 42 – 44, 205 – 206, 208 and 220, Holden Reid (1990), p. 70, Liddell Hart, B. H: Strategy, second revised edition, A Meridian Book, New York 1991, p. 321 – 323 and Liddell Hart: The Future of Infantry, Faber & Faber Ltd., London 1933, p. 44 – 45.

"indirect approach" to describe strategic, operational, and tactical moves designed to defeat the enemy as economically as possible. That is why the "Strategy of Indirect Approach" is today linked to manoeuvre warfare and can also be seen as a logical extension of Sun Tzu's strategic and tactical thinking. However, it should be remembered that Liddell Hart did not use the word "operational" before WW II. Therefore Leonhard's interpretation, though sound in today's terms, is based on Liddell Hart's later writings, which already include the German practice and experience of mobile warfare during WW II. In Liddell Hart's theory, the main keys to success or to decisive victory, as Liddell Hart calls it, are subtlety, surprise and innovation performed with a combination of speed and flexibility in the use of mechanised forces. However, Liddell Hart comes very close to a circular argument, a "decisive victory is an event, which is secured by an indirect approach." Therefore, decisive victory is also difficult to define, although it can loosely be interpreted as meaning a swift victory with a low expenditure of resources. According to Brian Bond, Liddell Hart's method is unscientific as well. In fact there are a lots of cases in history where indirect approaches have ended in failure. Nevertheless, whatever shortcomings the "Strategy of Indirect Approach" might have from the viewpoint of scholarship, Bond regards it as an educational, ideological military doctrine or philosophy that influenced the thinking of officers in Britain and abroad: the most important of them were Bernard Law Montgomery and Archibald Wavell, who later became Field-Marshals, and German General Heinz Guderian.[46]

The "Strategy of Indirect Approach" can be interpreted from two viewpoints. At a tactical level, because of his experiences of the stalemate in WW I, Liddell Hart believed that mobility was the solution for winning future battles and avoiding attrition. Instead of moving large-scale units, like corps and armies rapidly on the battlefield, manoeuvre would be restored by relying on the tactical manoeuvring of many small units, whose segments would then form a base for enlarging successes into large-scale offensives. In addition, Liddell Hart also adopted tactical principles to his theory. It is interesting to note that they are quite similar to the common principles of war – surprise, economy of force, and manoeuvre or flexibility. Liddell Hart only consolidated them as can be seen in Appendix 1. In addition, they can be seen as derivatives of the principles of Fuller, who published his list in the Journal of the Royal United Services Institution in February 1916; principles that, according to John Keegan, formed the immediate source of the Liddell Hart list.[47]

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[46] Leonhard, p. 46 – 48, Bond, p. 37 – 38, 55 and 59, Mearsheimer, p. 88 and Liddell Hart, Basil Henry: Memoirs, Volume II, Cassell, London 1965, p. 162 – 165.

See also Hamilton, Nigel: Monty. The Making of a General 1887 – 1942, Hamish Hamilton, London 1981, p. 166.

After WW I, there was a new generation of modern officers in Great Britain – and later also elsewhere – who made the fullest use of science and technology to minimise casualties and who thought in terms of achieving success by surprise and superior mobility. According to Bond, these men, including Montgomery and Wavell, were fertile soil for Liddell Hart's thoughts.

[47] Mearsheimer, p. 27, Liddell Hart: Strategy, p. 335 – 337, Keegan, John: On the Principles of War, Military Review, December 1961, p. 66 and Holden Reid, Brian: J. F. C. Fuller: Military Thinker, Macmillan Press, London 1987, p. 35 – 36 and 85.

See also Tsouras, p. 599.

At the strategic level, Liddell Hart used the philosophical concept of the "expanding torrent", an analogy that ultimately belonged to Sun Tzu. Robert Leonhard explains the idea of the "expanding torrent" as follows: "An attack in war should follow the pattern of flowing water. As water proceeds downhill, it naturally avoids strong surfaces. Instead, it flows about seeking weak points and gaps through which the water begins to trickle. When such gaps are found, the whole body of water rushes toward it, speeds through it, and then expands on the other side." So, an attack should also avoid enemy strengths and exploit his weak spots or gaps. To buttress this point of view, Leonhard has summed up the three distinguishable goals of manoeuvre in Liddell Hart's thinking. They are 1) to avoid enemy strength, 2) to deceive the enemy in order to deny him the opportunity of bringing his strength to bear and 3) to attack enemy geographical, functional and psychological vulnerabilities.[48] These three principles are also more commonly seen as the basic pillars of the modern theory of manoeuvre. Only the means by which they are achieved vary.

There are still two principles that are central to the concept of mobility. They are force dichotomy; i.e., the division of forces, and the command and control system. Liddell Hart recognised that it might be necessary for an attacking unit to also directly engage a defender's forces to effect a breakthrough. To explain this idea, he offered a concept called the "Man-in-the-Dark Theory". In his example, two unarmed men are fighting in the dark. In its basic form, this means that each man tries to locate his opponent with one arm outstretched, but each also tries to cover himself. Once a man touches his enemy, he tries to keep his opponent stationary with his outstretched hand while delivering the main blow with the other hand. In this example, Liddell Hart claimed that modern armies used the same pattern on the battlefield. Therefore, Liddell Hart's analogy is useful. It represents – as Leonhard also notes – a modern application of Sun Tzu's model of force dichotomy. Sun Tzu's idea was that part of the armed forces, the "ordinary force", would pin the enemy, while another part of the army, the "extraordinary force", would manoeuvre to envelop or outflank the enemy. In Liddell Hart's dichotomy, the "advance force", acting as Sun Tzu's "ordinary force", is used to hold the enemy and occupy his attention. The "main attack", conducted by the "extraordinary force", is designed to push the enemy off balance by rapid manoeuvre. Mearsheimer also refers to Liddell Hart's force dichotomy. According to Mearsheimer, Liddell Hart used manoeuvre in two quite different but complementary ways. One is manoeuvre around strong points to drive deep into a defender's rear. This is the "expanding torrent". The other is manoeuvre,

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According to him, Fuller was a keen advocate of Napoleon's military art. Fuller's list of the principles of war has its origins in the principles of Jomini.
According to Tsouras, the principles of war, which are more or less similar in different countries, have been derived by military professionals through critical historical analysis of warfare. These chosen fundamental principles – and their combinations and applications – have historically been successful on the battlefield. In the United States, these principles were also adopted for the U.S. list in the early 1920s and have since only been modified slightly. This was a continuation of the line of thought that had prevailed until then, in the 19th century the Americans used Jomini's principles.

[48] Leonhard, p. 47 and 50 and Mearsheimer, p. 27.

where the aim is to eliminate points of resistance that cannot be bypassed. This latter method is described in the "Man-in-the-Dark formula".[49]

1.2. The German *Blitzkrieg* doctrine

It is widely accepted that the German concept of armoured warfare, more popularly known as the *Blitzkrieg* doctrine, was especially influenced by the thoughts of both J. F. C. Fuller and Liddell Hart. This question is also fundamental in the context of the Israeli art of war, which has similarities to Fuller's and Liddell Hart's thoughts and to German practice. According to Paul Dyster, the real key to German success in the early phases of WW II was an innovation of their own. William S. Lind sees the activities against enemy strengths and weaknesses as action against surfaces and gaps, derived from German WW I infiltration tactics; i.e., *Fläschen und Lükentaktik*. In its basic form, this means that rather than wasting lives, time, and materiel in foolish attacks against enemy strong points, manoeuvre constantly probed for weaknesses. In this concept, enemy strong points were surfaces that were to be avoided and enemy weak points were gaps that provided an opportunity to breakthrough. These gaps also included mental concepts, like use of the dark. Richard Simpkin goes further still. He states that "in the context of German military thought over the previous 50 years or more, the German tactical concept was only evolutionary and the tank emerged as a conclusion from the German studies." Therefore, he regards the tank not as a starting point for the Germans, but as a tool for principles that were already in existence. Economy of force and strategic mobility had also been a part of the German tradition since von Moltke the Elder's times in the latter part of the 19th century. Many of the other key elements of the *Blitzkrieg* doctrine were also in place by the end of WW I; e.g., the preoccupation with the two or multi-front problem, confidence in the feasibility of large-scale flanking manoeuvres and in battles of encirclement, and the use of elite units to probe and penetrate the weak spots of the enemy front. All this used the indirect as opposed to the frontal approach in the attack.[50]

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[49] Leonhard, p. 31 and 46 – 48, Mearsheimer, p. 28 – 29 and Sun Tzu: The Art of War. Wordsworth Editions Ltd., London 1993, p. 41 – 49 and 78 – 79.

According to Mearsheimer, Liddell Hart's original force dichotomy as well as his ideas on indirect approach were presented for the first time in three articles in the United Services Magazine and in the National Review in 1920 and in an article, The Man-in-the-Dark Theory of Infantry Tactics and the Expanding Torrent System of Attack, The Journal of the Royal United Services Institution, vol. LXVI no. 461, February 1921.
See also Bagnall, N. T: The Israeli Experience. A Study of Quality, Defence Fellow 1972 – 73, Balliol College, Oxford, LH 15/5/304, part 3, p. 209.
Bagnall mentions in his study that Clausewitz also proposed that there are two types of forces: those that operate against the enemy's main body to hinder his advance and prepare to mount a counter-thrust and a *Landwehr* formed from the whole mass of the people for operations against the enemy in rear areas. However, this force dichotomy is not evidence of a connection between Clausewitz's name and manoeuvre warfare. It is more a division between permanent troops and territorial forces.

[50] Dyster, Paul Albert: In the Wake of the Tank: The 20th-century Evolution of the Theory of Armoured Warfare, Ph.D dissertation, Baltimore Maryland, University Microfilms

According to Paul Dyster, the principles of the German *Blitzkrieg* doctrine were written down by a Staff Colonel, Hermann Foertsch, in his comprehensive work *Kriegskunst Heute und Morgen* in the late 1930s. However, according to the American officer and researcher Daniel J. Hughes, several researchers have found that *Blitzkrieg* was not an official doctrine and that the Germans did not have any documented principles on *Blitzkrieg* before WW II. In any case, Foertsch, whose research work was also translated into English in 1940 under the title *The Art of Modern Warfare* and into Finnish a year earlier, considers the character of the future war and the role of mechanised forces within it in his book. Several central overall principles for the use of different branches, especially those of armoured forces, were included in the book. Therefore, these principles could also have been interpreted as principles of the *Blitzkrieg* doctrine. It is also obvious that Foertsch was not personally behind the ideas that he presented in this work. General Heinz Guderian, the builder of the German armoured forces, had already written on the use tanks in several field manuals earlier in the 1930s. He also wrote about his central philosophy of armoured warfare in his book *Achtung – Panzer!*, published in 1937. It seems likely that Foertsch's book was something between a simplified handbook on modern warfare and a field manual. Nevertheless, it is a window on German military thinking in the 1930s. In this thesis, the German theory of *Blitzkrieg* is called a doctrine.[51]

Foertsch's ideas reinforce Dyster's statement that the German *Blitzkrieg* doctrine was an innovation of their own, but this does not explain everything.

International, Dissertation Information Service, Michigan 1988, p. 104 and 221, Simpkin, p. 27 and Lind, p. 73 – 75.

Despite their invention of quite modern infiltration tactics, the Germans were finally defeated in WW I. According to Lind, the critical failures were, however, made at the strategic level in the General Staff, not at the tactical level. The Germans failed because General Ludendorff sought gaps at the enemy's strong points and committed his reserves to attrition warfare before his enemies committed theirs in the Spring 1918 Offensive on the Western Front.
See also Howard, Michael - Paret, Peter: Carl von Clausewitz. On War, Princeton University Press, Princeton, New Jersey 1984, p. 529 – 531, 535 – 536 and 541 – 542 and Sude, p. 856 – 857.
Clausewitz favoured the superiority of strategic defence. According to him, "defence is a stronger form of war than attack." Nevertheless, he also understood that victory could only be achieved by taking the offensive. Offensive action against defensive positions or attacks on entrenched camps, in other words against enemy strong points, were seldom successful according to Clausewitz. Only when defensive positions had been built hurriedly or left in some way incomplete could an attack be considered. However, Clausewitz's principles of war also stress mobility both at the mental and the practical levels of warfare. These principles are Superiority of defence, Numerical superiority, Active defence, Simplicity, Offensive, Concentration of forces, Economy of forces, Main effort, Culmination, Reserve, Surprise and Endurance.

[51] Dyster, p. 209 – 210, Hughes, Daniel J: Blitzkrieg in Brassey's Encyclopedia of Land Forces and Warfare, Brassey's 1996, p. 155 – 161 and Foertsch, Herman (eversti): Nykyinen ja tuleva sotataito, Werner Söderström, Porvoo 1939 (a Finnish translation of Foertsch's *Kriegskunst Heute und Morgen*).

See also Murray, Williamson: Forces strategy, Blitzkrieg strategy and the economic difficulties: Nazi strategy in the 1930s, RUSI Journal, March 1983, p. 42.
Professor Murray also mentions that *Blitzkrieg* only described a particular pattern of operational art, and is best described as an evolutionary, rather than new, system of tactical combinations.

Foertsch refers to his opponents' ideas and experiments in the use of tanks in many places and although the names of the opponents are not directly mentioned, several hints reveal that they were the British in particular and the French to a lesser degree. The central role of the British can be explained by the fact that Englishmen were in charge of the development of armoured warfare, though some Frenchmen, Colonel Charles de Gaulle and Major F. O. Miksche in particular, also had similar thoughts on the use of independent tank formations. Nevertheless, today the most current research tends to stress the German originality behind their WW II armoured warfare doctrine, which at least partly might stem from Liddell Hart's post-WW II analysis of the German *Blitzkrieg* doctrine for his own purposes. This might also be partly due to the fact that it was the Germans who mostly applied these new ideas.[52]

According to Simpkin, the distinguishing feature of the *Blitzkrieg* doctrine is an avoidance of battle. The fundamental idea was to surprise the enemy, take advantage of weak spots, and finally penetrate to an operational depth through a gap in enemy lines. This ideology can also be seen in Foertsch's book. Foertsch favoured offensive operations and, within this context, the idea of transferring battles onto enemy soil. Operational out-flanking and encirclement held a central place. Foertsch also recognised that every encircling attack must first penetrate the enemy front by seeking gaps. After penetration, success had to be guaranteed by the use of massed force at a decisive point that was one of the enemy's weak spots. All this also appears in Guderian's *Achtung – Panzer!*, which in addition provides an overview on tactics, armament and the co-operation of tank forces and motorised infantry.[53]

At the operational level, German thinking – the seeking of gaps – seems to owe much to Liddell Hart's concept of the "expanding torrent", although the idea of "terrain before combat" might also have its origins in Jomini. General Heinz Guderian in particular favoured "the hazards of difficult terrain to the hazards of combat." This is why scholars, particularly Brian Bond, have seen Liddell Hart's philosophical concepts of long-range strokes and operations against enemy communications as thought-provoking to the Germans.

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[52] Guderian, Heinz: Achtung – Panzer!. The Development of Tank Warfare, Cassell & Co, London 1992, p. 150 and Miksche, F. O: Blitzkrieg, Faber and Faber Limited, London 1941, p. 7 – 8.

Charles de Gaulle, later President of France, presented his *Division de choc* in 1934.
Miksche, later Lieutenant Colonel, was originally a French officer, who during the Spanish Civil War served on the General Staff of the Spanish Republican Army. During WW II he served under de Gaulle's command in the Free French Forces and also on General Eisenhower's staff. In accordance with his experiences in the Spanish Civil War, Miksche published a book called *Blitzkrieg* in 1941, which was about armoured warfare in the future. When this work was published, it was a very modern interpretation of air-land warfare. According to the author, the manuscript was already ready in 1939 before WW II broke out. Therefore its ideas were visionary; *Blitzkrieg* is like a description of German armoured warfare in WW II, except that the book was written before the concept was applied for the first time.
See also Miksche, F. O: ATOMIC Weapons & Armies, Praeger, New York 1955.
On the cover of this book, Liddell Hart assessed Miksche as follows: "Miksche is one of the world's most stimulating military writers."

[53] Dyster, p. 209 – 211, Foertsch (1939), p. 138 – 143, 208, 212 and 218 – 222, Guderian: Panzer Leader, Joseph Dutton, London 1952, p. 20 and Guderian (1992), p. 169 – 172.

However, the sources of Liddell Hart's influence on German operational philosophy are ambiguous and therefore the origins of the ideas are difficult to determine. According to General Fritz Bayerlein, who was Chief of Operations to Guderian's *Panzer* Group in 1940 and Field-Marshal Erwin Rommel's Chief of Staff during part of the North African campaign, the "Strategy of Indirect Approach" as a theory was unknown to the Germans when WW II broke out. On the other hand, Major General F. W. von Mellenthin, Chief of Staff of the 4th Panzer Army in 1944, stated after the war that German tank successes in the first year of the war were mainly due to the fact that the Germans adopted the theories taught by Captain Liddell Hart.[54]

In the tactical and technical matters of armoured warfare, General Guderian came, according to Brian Bond, already as early as 1923 or 1924 across the ideas of Fuller, Liddell Hart and a British tank officer by the name of Giffard le Quesne Martel (later a General) in the special periodical review *Wehrgedanken des Auslands*. Later the books and articles of these men gave Guderian initial ideas on combining *Panzer* and *Panzer*-infantry units into self-contained armoured divisions. On the whole, however, Fuller's, Liddell Hart's and other British officers' influence on German armoured and mechanised warfare has occasionally been heavily disputed up to our days. It is also difficult to give a simple answer about their influence on armoured warfare. In addition, the developers of armoured warfare all adopted each others' thoughts.[55]

Despite the dispute over the origins of armoured warfare, there is reason to stress some central differences in the British and German concepts of mechanised warfare because they are significant in the context of Israeli armoured warfare. According to Christopher Bellamy and Paul Dyster, Fuller and two British tank officers, Charles F. N. Broad (later Lieutenant General) and George M. Lindsay (later Colonel), all recognised a tank force's potential for deep penetration but emphasised pure tank formations. They favoured the need for firepower in shock action at the expense of the combined arms principle and therefore did not assign any special value to infantry, except

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[54] Simpkin, p. 27 – 28 and 34, Leonhard, p. 50, Guderian (1952), p. 20 and Frieser, Karl-Heinz: Blitzkrieg-Legende. Der Westfeldzug 1940, R. Oldenbourg Verlag, München 1996, p. 431.

Jomini's concept of "terrain before combat" had been re-emphasised at least by the American military theoretician Alfred Mahan and by Liddell Hart.
On Liddell Hart's influence on Generals von Manstein, Guderian, von Mellenthin, von Manteuffel and Field Marshal Rommel, see for example Bond, p. 226, 231 and 234 – 235 and Mearsheimer, p. 194.
Bond quotes von Mellenthin's statement from a talk that von Mellenthin gave at the Safari Club in 1959. Major General von Mellenthin saw action in every theatre of WW II in Europe and in North Africa and was associated with Rommel and Manstein as well.

[55] Dyster, p. 173 – 174, Bond, p. 221, Guderian (1992), p. 8, 141 and 158n, Frieser, 410 and Macksey, p. 117 and 216.

Frieser also mentions Tukhachevsky's ideas as being behind Guderian's concepts.
See also Mearsheimer, p. 39 – 41 and Trythall, Anthony, John: "Boney Fuller". The Intellectual General 1878 – 1966, Cassell, London 1977, p. 203 – 205 and Guderian, Heinz: Sotilaan muistelmia, Kustannusosakeyhtiö Otava, Helsinki 1956, A Finnish translation of Erinnerungen Eines Soldaten, p. 17 - 18 and 20 – 21.

when it was needed to hold ground seized by tanks or protect them from infiltration attacks. In addition, Fuller largely neglected air power as a means of imposing one's will on the enemy far behind his forward positions. Martel and Liddell Hart had a more balanced view of a mechanised combined arms force. They also saw a need for armoured infantry in the offensive to help clear obstacles so that tanks could advance and preserve the pace of the attack. However, according to Brian Bond, Liddell Hart also considered Fuller's thoughts. Thus, it is reasonable to suppose that both Liddell Hart and Fuller were combined arms advocates. Fuller only emphasised the battlefield potential and firepower of tanks more, while Liddell Hart saw the co-operation of different branches and arms, including the use of air power, as central.[56]

In 1931 – 32, Guderian was, according to Robert O'Neill, ready to turn his ideas into reality and in 1935 the first three *Panzer* divisions were created. Brian Bond regards it as likely that Guderian had read Liddell Hart's article *The Development of a New Model Army* in the Army Quarterly in October 1924. In this article, Liddell Hart expressed his opinion on future land forces composed of composite brigades of tanks, self-propelled artillery and aircraft to strike defended positions, and infantry in armoured carriers acting both offensively and defensively. In 1927 this concept was also put to the test in extensive trials of the Experimental Mechanised Force on Salisbury Plain. According to Dyster, this force seemed to follow the ideas of Liddell Hart and was also a model for Guderian on what an armoured division should look like. In 1927 the Germans set up their own Experimental Mechanised Brigade and instructions that were intended to secure the co-operation of the conventional arms with the tank forces were drawn up. In this concept, the solution was to motorise infantry and artillery to enable them to follow the tanks. In addition, the support of air power was connected to the use of armoured forces later in the 1930s. In Guderian's concept, air power had a triple role. The first was to halt the flow of enemy reserves. The second was air power's usefulness in attacks against other targets in the enemy's operational depth. The third was the fact that armoured thrusts needed air cover.[57]

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[56] Bellamy, p. 82 and 87, Dyster, p. 173 – 174 and interview of Professor Brian Bond 12 November 1998.

See also Mearsheimer, p. 88 – 90. Mearsheimer considers Liddell Hart to have favoured strategic bombing above all else.

[57] O'Neill, Robert: Doctrine and Training in the German Army 1919 – 1939. Howard, Michael (ed.): The Theory and Practice of War, Cassell, London 1965, p. 152 – 153, 158 – 159 and 164, Dyster, p. 189, Bond, p. 222 – 223 and Guderian (1992), p. 141 – 142, 167 – 168, 195 and 197.

Brian Bond and Dr. Robert O'Neill evaluate Liddell Hart's role in a manner similar to Dyster. See also Mearsheimer, p. 37 and 39 – 41, Macksey, p. 117, Trythall, p. 203 – 205 and Guderian (1952), p. 20.
According to Macksey and Trythall, General Guderian read what Fuller had written and assimilated of the tank trials while, according to Richard Simpkin, the German tactical concept was fundamentally an all-arms approach and therefore more similar to Liddell Hart's thoughts. Mearsheimer and Macksey stress that Liddell Hart was not a combined arms man before WW II and later only copied Fuller's ideas. Anthony Trythall also states that it was Fuller who influenced the German *Panzer* generals and was responsible as well for changing Liddell Hart's early thinking on armoured warfare. However, according to Guderian "it was Liddell Hart who emphasised the use of armoured forces for long strokes ... and also

However, Brian Bond also stresses that it would be straining the evidence too far to suggest that the first German *Panzer* divisions resembled the "New Model Division" too closely. This seems probable. Although Guderian realised that special tank divisions supported by infantry, artillery, engineer and signal units with a cross-country performance equal to that of the tanks had to be formed, the first three *Panzer* divisions were more tank-heavy than combined arms divisions. Therefore they did not, according to Richard M. Ogorkiewicz, differ much from other contemporary developments such as the French *Division Légère Mécanique* (D.L.M.) and the British Experimental Tank Brigade of 1934, each based on tanks and backed by infantry. The first *Panzer* brigade, like the British tank brigade, consisted of two tank regiments of two tank battalions each, for a total of 561 tanks. However, only the best German divisions reached the stage where about half of the infantry was on tracks and support units were put on tracks even more seldom.[58]

British influence on German armoured warfare also continued in the late 1930s. In 1934 and 1935 the British had additional tank trials in Bovington and on Salisbury Plain. Macksey states that Guderian in particular read what Fuller had written and assimilated whatever the British learned at the exercises. He recognised that armoured tanks were the best way to impose the essential factors of destruction and suppression upon an enemy. The Germans used these experiences in their training exercises, but selectively. This is revealed in Richard M. Ogorkiewicz's *Design and Development of Fighting Vehicles.* According to Ogorkiewicz, the Salisbury trials encouraged two divergent lines of development, neither of which made the most effective use of tanks in Britain. The first was embraced by tank enthusiasts and led to the creation of armoured formations composed largely of tanks, which supports Fuller's role in all-tank concepts. The other line of development was dictated by traditional ideas about the pre-eminence of infantry and led to the creation of specialised tank units for co-operation with the infantry. Therefore, paradoxically, despite the ideas on modern tank warfare, the quest for new methods of employing tanks resulted in the creation of two categories of tanks and tank units in Great Britain, France and the United States. In Ogorkiewicz's words, the development was "in keeping with the traditional division of armies into 'horse' and 'foot'." The Germans, on the other hand, applied only those ideas from the British experience that they considered useful. This can be seen in Guderian's emphasis on developing the principle of freedom for the armoured divisions.[59]

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proposed a type of armoured division combining *Panzer* and *Panzer*-infantry units. Deeply impressed by these ideas, I tried to develop them ... for our army."

[58] Bond, p. 223 and Ogorkiewicz, R. M: Armoured Forces. A History of Armoured Forces and their Vehicles, Arms and Armour Press, London 1970, p. 72 – 73.

[59] Macksey, p. 117 – 118, Ogorkiewicz, R. M: Design and Development of Fighting Vehicles, MacDonald & Co. (Publishers) Limited, London 1968, p. 30, Guderian (1992), p. 142 and O'Neill, p. 159.

According to Macksey, Guderian gives credit in his *Memoirs* to the British tank officers, namely Broad and Lindsay as well as Fuller, Martel and Liddell Hart. However, Macksey points out that Liddell Hart's role was minor in this phase. In any case, the reader should remember that Liddell Hart already developed his ideas on mechanised warfare in the early 1920s and afterwards was, especially in the 1930s, more interested in grand strategy than in tactical matters.

The German organisations were built with the overall aim of flexibility in the mobile deep battle. Therefore, the Germans opted, according to Dyster, for "the creation of forces with the maximum possible adaptability to the greatest possible number of separate environments." This means that, at the operational level, a corps of two *Panzer* divisions and one motorised division was seen as the best combination for the encircling attack. Macksey also sees the corps as a balanced combined arms force capable of and trained – unlike its British and French counterparts – to form enough powerful all-arms *ad hoc* battle groups to deal with varying situations in different types of terrain. The *Panzer* division itself was regarded as the best tactical formation that could survive alone on the battlefield and provide the flexibility needed.[60]

To properly utilise the advantages of their *Blitzkrieg* doctrine in practice, the Germans developed a special command and control system called *Auftragstaktik*. According to Paul Dyster, Colonel Foertsch's ideas can also be seen in the background of these ideas. Because of the unpredictability of battle, Foertsch saw success or failure as depending on what happened when an attack reached its high point. This meant a need for flexible decision-making. A centralised command process in rapidly changing, uncertain situations was seen as insufficient to lead troops tens of kilometres behind enemy lines because the knowledge of the situation at the front would always be too old for real-time orders. A decision about whether a success could be exploited further, and in which direction, had to be made quickly. Therefore the entire leadership group, from the top to the lowest tactical levels had, according to Glen Scott, to be encouraged to believe in initiative and flexibility to the extent that decisions were instinctive and automatic. The real basis was an unbroken chain of trust and mutual respect running from the controlling operational commander to the tank or section commander. In this concept, sub-commanders would be given a task of their own, and told the resources – and constraints as well, if needed – that were seen as necessary for carrying out the task. In the German version, according to Simpkin however, the subordinate commander was also free to modify the task set for him without referring back to his superior, if he judged that further pursuit of that aim would not represent the best use of his resources in furtherance of his superior's intention. In this command process, operational commanders were made to accept greater risks than in traditional order tactics. The advantage was a more real-time picture of the situation on the battlefield in support of decision-

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See also Bond, p. 229 – 230 and O'Neill, p. 157.
According to General Wilhelm von Thoma, Guderian had used reports on the British manoeuvres as a blueprint for the training of his own *Panzer* division. These reports also included Liddell Hart's writings.

[60] Dyster, p. 212, 250 and 260 and Macksey (1981), p. 141.

According to Macksey, the direction taken by the German tank advocates appears clearly in Guderian's *Achtung! Panzer!,* published in 1937. This book showed the lines of Guderian's all-arms mechanised formations. Each *Panzer* division had a tank brigade of four tank battalions, a motorised rifle brigade of two infantry battalions in lorries and on motorcycles, and auxiliary units composed of a motor-cycle battalion, a reconnaissance battalion of armoured cars and motor-cycles, an anti-tank battalion with 37 mm guns, and a field artillery regiment of two battalions of howitzers.
According to Dyster, the Germans also used a force of infantry and parachute troops aided by two *Panzer* corps in the combination described above in France in 1940.

making. Delegation of authority to lower ranks provided an opportunity to maintain the initiative and continuity, which both were and still are the central pillars of mobile warfare.[61]

Auftragstaktik was also a method that included technical matters, the most important of them being the organisation of staff duties and the signals service. Martin van Creveld, who has studied command systems in different armies, gives the credit for recognising the importance of delegated decision-making to Generals Guderian and Fritz Fellgiebel, who was the commanding officer of the *Wehrmacht*'s Signals Service. With the guidance of these men, the Germans streamlined their staff organisations and communications. A dozen officers at the operational level headquarters, including the commander and combat support advisers, were seen as adequate. In addition to executing staff duties, this command post would also have been capable of forming a tactical headquarters or a forward command post of the commander and two staff officers for limited periods.[62]

The last point about the German armoured offensive was that it was based on the success of the establishment of superiority at a continually shifting set of critical points at the very beginning. Reconnaissance troops sought gaps that concentrated units could drive through. Tanks and infantry supported by aircraft and artillery then spearheaded the attack, deliberately bypassing the strongest centres of organised resistance in order to reach and destroy the command, control and communication centres deep in the enemy rear, beyond the belt of fortified defences. Bypassed pockets of resistance were the responsibility of follow-on forces, especially of the mechanised infantry divisions. Anti-tank guns, guarded by infantry and artillery, were emplaced on vital ground after it was seized. The enemy was then lured into destroying himself in attacks on this "hammer-and-anvil" style trap. In addition, the follow-on forces protected the walls of the corridor that supplies had to pass along to the armoured forces in the spearhead. An illustration of the German *Blitzkrieg* doctrine can be seen in Appendix 2.[63]

Finally, it must be remembered that at the same time that the armoured warfare concept developed in Western Europe, the Soviets developed their

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[61] Dyster, p. 211, Simpkin, p. 230 – 232 and Scott, Glen L: British and German Operational Styles in World War II, Military Review, October 1985, p. 40 – 41.

[62] van Creveld, Martin: Command in War, Harvard University Press, Cambridge, Massachusetts and London, England 1985, p. 192 and Simpkin, p. 261.

See also Mearsheimer, p. 29 and 41.

The British role in the development of *Auftragstaktik* remains unclear. According to van Creveld, there is very little in Liddell Hart's and Fuller's writings to indicate that they paid the least attention to command problems. This is obvious. Ideologically, however, Liddell Hart at least seems to have also paid attention to the command question. Liddell Hart, who studied the battle-drill system of the Mongols, already emphasized the importance of taking military actions that would throw the enemy's command and control structure off balance both physically and psychologically. His understanding of the problem is also revealed in his book *Paris* quoted by Mearsheimer as follows: "With a mobile army, control must be more prompt and flexible than ever."

[63] Dyster, p. 104 – 105 and 514, Macksey (1981), p. 141 and Higgins, George A: German and US Operational Art: A Contrast in Maneuver, Military Review, October 1985, p. 24 – 25.

own concept of mobile warfare during the inter-war period. However, this concept, which in many ways was a combined arms approach, came into being prematurely and its development was interrupted by Stalin's purges. It only really came into being in the Red Army after WW II. Like their Western counterparts throughout the 1920s and 1930s, Soviet military theorists, especially Mikhail N. Tukhachevsky and Vladimir Kiriakoviz Triandafillov, also pondered how to restore mobility and manoeuvre to the relatively stagnant battlefield. In addition, according to the American Soviet expert David M. Glantz, the Soviets, like the Germans and Fuller, but unlike their Western colleagues, understood that the operational level of the art of war was a distinct entity, and not a sum of the results of tactical battles.[64]

Tukhachevsky, who wrote over 100 articles and published 22 different books between 1920 and 1937, mainly in the 1920s, described the concept of "maximum contact area" in his writings. In its basic form, this meant that a mass army, composed of infantry, artillery and tanks, operated over a broad front to achieve decisive superiority at the critical time and place. After that came the second phase, the exploitation at chosen weak points where cavalry, with air and mechanised support, rushed through the gap. Triandafillov, on the other hand, focused more on the second phase of the operation and described an all arms force, a "shock army", used for the breakthrough in his concept.[65] Therefore, while both Tukhachevsky and Triandafillov favoured deep penetration of the enemy's lines of communication and also saw a need for different troops in the forward lines and in depth, Triandafillov's concept was more similar to the classic ideas behind mobility. His purpose was to take advantage of enemy weaknesses. Tukhachevsky, on the other hand, favoured

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[64] Glantz, David M: Soviet Military Operational Art. In Pursuit of Deep Battle, BPCC Wheatons Ltd, Exeter 1991, p. 19.

Glantz bases his thesis on his comparative analysis of the contents of the French, British and American Field Regulations and of the thinking of the Soviets and Germans during the inter-war period.

According to Glantz, there were also differences between the Soviets and the Germans. The most important of them was that the Germans tended to go no higher than the operational level of warfare, although they adopted combat methods that were also suited for the achievement of strategic success in battle in the 1930s.

See also Bond, p. 142 and Pachter, Dan: A Day with Captain B. H. Liddell Hart, Bamachaneh (Israel Defence Magazine), March 1960, LH 15/5/304, part 2.

Liddell Hart and the Soviets were also not unknown to each other. According to Pachter, the Soviets asked Liddell Hart to be a military adviser for the Red Army at a Disarmament Conference in 1932 where Liddell Hart was present. This did not happen. According to Lloyd George, Ivan Maisky, the Soviet Ambassador in London, was astonished in 1942 to learn that the British had not used Liddell Hart's expertise.

[65] Simpkin, p. 37 – 38 and Tukhachevsky, M. N: Išbrannye proišvedenyja (Selected Works), vol. II, Publishing House of SSSR Ministry of Defence, Moscow 1964, p. 261– 262.

See also Glantz, David M: Soviet Operational Formation for Battle: A Perspective, Military Review, February 1983, p. 4.

According to Glantz, Marshal Tukhachevsky and his close associates defined deep battle as follows in 1936: Simultaneous assault on enemy defences by aviation and artillery to the base of the defence, penetration of the tactical zone of the defence by attacking units with widespread use of tank forces, and the violent development of tactical success into operational success with the aim of the complete encirclement and destruction of the enemy. This also shows Tukhachevsky's inclination towards mass force.

the idea of breaking an opponent's lines by massing manpower and armament, both simultaneously in the front lines and in depth. Therefore his ideas owed a great deal to attrition warfare as well.

During the Polish and French campaigns, German armoured forces performed well. Despite Guderian's emphasis they did not, however, become balanced all-arms combinations. The level of mechanisation of the *Panzer* divisions remained low. Major weaknesses were the lack of a cross-country performance capability for motorised infantry and other auxiliary units, the most important of them being artillery. Nevertheless, these shortages were not revealed before "Operation *Barbarossa*" in the Soviet Union in summer 1941. The swift collapse of Poland did not cause any anxiety for the Germans, although motorised infantry and artillery had difficulties in keeping pace with the tanks. The Polish Army was too slow to react to German breakthroughs, and the air force was able to compensate for the lack of self-propelled artillery with close-air-support. In France, short distances allowed adequate support by the air component and the dense road network enabled the movement of follow-on forces as well. However, the problems became apparent in the enormously wide steppes of the Ukraine. Due to losses, the main emphasis in tank production was put on main battle tanks, but this never was enough during the war to maintain the ability for concentrated thrusts. Mechanised infantry had to survive on their worn-out carriers and finally with trucks that could not follow the armoured spearheads. It was the same with supplies. The result was that the Soviets were able to isolate the spearheads before long and finally to destroy them one at a time.[66]

1.3. Manoeuvre warfare theory

In the early 1970s after the Yom Kippur War in the Middle East, the Americans set up a thorough study of the operational art. The main impetus was Israeli operational successes after their initial set-backs against far superior enemies during the 1973 War. This war raised the question of how this was possible. In the 1970s, the research led to the theory of manoeuvre warfare and later in the 1980s to the American "AirLandBattle" doctrine and to its European application the "Follow-on-Forces-Attack" doctrine.[67] Although American manoeuvre warfare theory is outside the period of this study, it is briefly presented here because the theory reflects past wars and, in addition, it is an excellent way to describe and analyse the basic facts behind the concepts of mobility.

In 1974, John Boyd, a retired U.S. Air Force Colonel, noticed in his studies of air-to-air combat exercises that American pilots achieved a 10:1 kill-ratio over North Korean and Chinese opponents during the Korean War although

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[66] See for example Guderian (1956), p. 152 – 154, Dyster (1988), p. 249, 514 – 515, Simpkin, p. 34 and Macksey, p. 155 – 158.

[67] Hardy, p. 66 and 71 – 73.

Brigadier N. T. Bagnall, whose study *The Israeli Experience* has been one of the sources of this thesis, was one of the European military officials responsible for developing the "Follow-on-Forces-Attack" doctrine.

American planes were technically inferior to the Soviet-made planes used by their opponents. This raised the question of why this happened. Colonel Boyd also later widened his studies to ground combat; i.e., to battles, campaigns and wars like Leuctra (in 371 B.C.), Vicksburg in the American Civil War and the German invasion of France in 1940. In these examples, he found that one side had presented the other with a sudden, unexpected change to which it could not adjust in a timely manner. As a result it was defeated and generally at a small cost. In addition, the losing side had often been physically stronger than the victor. This reality made Boyd consider what the common denominator was in all these cases and lead to the birth of his theory of manoeuvre warfare, also called the "Boyd theory".[68]

According to Boyd, conflicts – small or large with greater or lesser forces involved – can be seen as time-competitive **observation – orientation – decision – action** cycles. The side that is faster in this cycle, called both the "Boyd Cycle" and the "OODA-Loop", gains a tremendous advantage. As a consequence of this, Colonel Boyd also defines manoeuvre warfare as follows: manoeuvre means going through however many "OODA-Loops" are required faster than the enemy until he loses his cohesion and can't continue fighting as an effective, organised force. This led to the definition of the purpose of manoeuvre warfare as well. According to former Senator Gary Hart of the U.S. Armed Services Committee, "the object of maneuver warfare is to destroy the enemy's cohesion – and the opposing commander's ability to think clearly – by creating surprising and dangerous situations faster than he can cope with them."[69] Today, most scholars and military analysts agree with the thought that manoeuvre in the broadest sense of the term is the essence of conducting war from the operational perspective.[70]

Robert Leonhard also sees manoeuvre warfare as a more philosophical point of view. He notes that physical movement is not a matter of a course to success. Therefore, manoeuvre must aim at breaking the enemy's will; a concept that is closely connected to Sun Tzu's thinking. In this concept, manoeuvre is defined purely as "the movement of troops toward the objective without the idea of battlefield combat." Each time the commander successfully applies manoeuvre theory, he preserves his resources. Therefore at the strategic and operational levels of warfare the concept of firepower or direct destruction of the enemy must not, according to Leonhard, be attached to the definition of manoeuvre warfare. According to him, the key word in manoeuvre is surprise, which in the highest and purest application of the concept is to pre-

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[68] Lind, p. 4 – 5.

[69] Ibid., p. 5 – 7, Leonhard, p. 51 and Dyster, p. 533.
OODA is an abbreviation of the first letters of the word of the cycle; **O**bservation, **O**rientation, **D**ecision, **A**ction.
Lind, the author of the Maneuver Warfare Handbook, was an advisor on military affairs to Senator Hart in the early 1980s. This explains why the "Boyd theory" parallels Senator Hart's objectives in manoeuvre warfare.
Senator Hart's quotation is made from Gary Hart's article What's Wrong with the Military? NYT Magazine, February 14, 1982, pp. 16 – 19.

[70] Newell, p. 79.

empt the enemy and disarm or neutralise him before a fight. Therefore in manoeuvre warfare the objectives of movements are the enemy's critical and vulnerable points, not the physical centre of gravity of his troops. To explain this, Leonhard gives an example from chess. In chess, the opponent's centre of gravity is the king, which is by no means the strongest piece, but its neutralisation ends the game. In warfare, concrete objectives of this type can be unprotected flanks, rear area installations (like headquarters, supply troops and reserves) or important geographical features that serve as a precondition for one's own manoeuvres (like road nets), among other things. However, the aim is typically not to conquer terrain or destroy the enemy, rather it is to paralyse him and break his will to fight. In addition, Leonhard tends to see an adversary's vulnerable moral and psychological characteristics (like fear of the dark or fear of encirclement) as objectives of manoeuvre.[71]

Simpkin also sees force dichotomy as fundamental to manoeuvre warfare, although he and Robert Leonhard also have some restrictions with regards to this. In manoeuvre warfare, one of the main goals of operational battle is to lessen the probability of prolonged military operations and to find the opportunity to seize the initiative and finally destroy the integrity of the enemy's operational scheme. To achieve these goals, the battlefield must be extended in three ways: by extending the battlefield in depth to disrupt the momentum of enemy troops not yet engaged in the battle, by extending the time scale so that current actions and the attack of follow-on echelons are integrated to win the close-in battles as time goes on and by increasing the emphasis on the use of a combined arms and joint services force structure. This list, compiled by the American tank officer and military analyst General Donn A. Starry, widens the traditional force dichotomy of screening forces and attack forces. However, experiences from the past reveal that any attempt to overemphasise the use of one particular arm or part of a force has led to problems. As Leonhard notes, "the lack of an integrated all-arms approach in modern warfare guarantees the loss of the synergistic combat multiplication that occurs when we present the enemy with complementary efforts of armour, infantry, artillery and aviation." This can be extended so that the more the operation is planned to go into the enemy's depth, in current terms beyond the "forward lines of troops" (FLOT), the more important co-operation between different services and branches is. Thus – as Leonhard says – the manoeuvre-oriented armies of today have developed combined-arms organisations for deep manoeuvre.[72]

Manoeuvre warfare theory also stresses the command and control system because the side that is faster in the decision-making process will gain a remarkable advantage. This benefit can be achieved in three ways. The first is mission tactics of which the best example is the German *Auftragstaktik*. The second is the standardisation of interfaces between different command and control posts. This method includes streamlining the responsibilities of fighting troops and support troops, but also includes the use of command post and staff procedures, the so called "Standing Operating Procedure" (SOP).

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[71] Leonhard, p. 18 – 20 and 29 – 30 and Simpkin, p. 22.

[72] Simpkin, p. xi and 37 and Leonhard, p. 96 and 174.
General Starry wrote the foreword in Simpkin's book.

However, these methods are more critical to unexpected action than mission tactics is. The third answer is communications technology, which until today has also proved to be vulnerable to the "fog of war". In addition, Lind uses the term "recon pull". In "recon pull" tactics, reconnaissance is used to pull the main force around enemy surfaces (strong points) and even more deeply into the enemy's vulnerable positions (gaps).[73]

To sum up the theory of manoeuvre warfare, it must be said that all modern interpreters of manoeuvre warfare; Simpkin, Bellamy, Lind, Newell as well as Leonhard, advance concepts that are quite similar. As a conclusion of the central principles of manoeuvre warfare theory, Robert Leonhard's way of thinking is the most illuminating. Leonhard has listed the central principles of the modern interpreters of manoeuvre warfare, derived from Liddell Hart, as follows:

- The first is **pre-emption**, which means offensive action to neutralise or destroy the enemy before the fighting has really begun.
- The second is positional or functional **dislocation**. This means rendering the enemy's strength irrelevant. A typical dislocation-type action is deception aimed at covering one's own centre of gravity by dispersion and concentration of forces, like Epaminondas at the battle of Leuctra.
- The third is **disruption**. This is a concrete strike against the enemy centre of gravity, which in this context means his "Achilles' heel"; for example, a lack of depth in the defence, not the strong points of his forces. The action is indirect. The aim of disruption is to avoid having to physically destroy the entire physical structure of the enemy force with a direct strike, and instead to attack his vulnerable, but essential objectives to paralyse him at a small cost.
- Finally, there are **psychological means**. Their purpose is to influence the enemy's mind and his will to fight. These means can be mental, but they also can be quite concrete like taking advantage of enemy fears like fear of encirclement or fear of the dark.[74]

Sometimes manoeuvre at the operational level of warfare is also seen as the opposite of attrition. While advocates of manoeuvre warfare favour movement against vulnerable enemy targets as a mean to paralyse him, the proponents of attrition warfare prefer to destroy the physical components of his

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[73] Simpkin, p. 228 – 231, 261, 267 – 268, Leonhard, p. 82, Lind, p. 19 and Gissin, p. 164. Simpkin calls mission tactics "directive control".

[74] Leonhard, p. 79 – 80 and 224.
According to Leonhard, the military dimension of low intensity conflict can be viewed as a form of dislocation.
See also Simpkin, p. 133 and 140 and Mearsheimer, p. 88 – 90.
Both Simpkin and Mearsheimer also stress Liddell Hart's influence on the principles of manoeuvre warfare. Simpkin places the origins of Liddell Hart's principles in the Sun Tzu phrase ... It is not a specimen of skill ... quoted above. The principles that stress indirect action more than immediate military action are: **deterrence** meaning the inhibition of warlike actions without a move from peacetime dispositions; **pre-emption** implying the use of manoeuvre to prevent the outbreak of hostilities; and **dislocation**, which means that when hostilities have broken out, victory is to be achieved mainly by manoeuvre.

army, especially the combat formations. According to the proponents of manoeuvre warfare, attrition is not a strategy; on the contrary, it is irrefutable proof of the absence of any strategy. Attrition is generally defined as "the reduction of the effectiveness of a force caused by the loss of personnel or equipment from enemy fire." A commander who resorts to attrition rejects warfare as an art and admits his failure to find an alternative. He uses blood in lieu of brains, as Robert Leonhard notes. The distinction between these approaches is not, however, so clear, although both the schools of manoeuvre and attrition have always existed. Therefore manoeuvre has also always included elements of firepower in a more or less prominent role. This can be seen in the pragmatic operational concepts of Tukhachevsky or in the German *Blitzkrieg* doctrine where air power had a central role. Christopher Bellamy analyses this dilemma in his book *The Evolution of Modern Land Warfare* by saying that "maneuver without the ability to strike is illusion." To buttress this argument, Bellamy quotes Alfred Mahan's words "force does not exist for mobility but mobility for force." According to Bellamy, manoeuvre can thus be defined as "moving one's forces in such a way as to multiply their effectiveness and ability to inflict attrition." In other words, manoeuvre is used to gain an advantage over the enemy in the form of a better fire position, or by getting astride the enemy's communications lines to force him to attack.[75]

Richard Simpkin goes still further. He combines the elements of both attrition and manoeuvre warfare together. According to Simpkin, the necessary factor in manoeuvre warfare is the division of forces. They should consist of the "ordinary force" and the "extraordinary force". This force dichotomy is also pivotal in the concepts of the other interpreters of manoeuvre warfare. The role of the "ordinary force" is to fix the enemy in place and, as Simpkin notes, perhaps to conduct a break-in battle to create a penetration while the job of the "extraordinary force" is to exploit the penetration. This point of view, where both forces have an active role, but also represent fire-power, narrows the artificial distinction between coincidentally occurring opportunities and opening gaps by force and finally the distinction between "direct" and "indirect approach". Therefore, while opportunities to unbalance the enemy and paralyse his operational and, perhaps, his strategic command centres and lines of communication are the fundamental elements behind manoeuvre warfare, it might be necessary to blast a hole for them in order to get forces into a position to do that as Liddell Hart emphasised. This has been the lesson of the German *Blitzkrieg* doctrine as well as of the Arab-Israeli wars; gaps in numerous operations had to be created or enlarged and secured by force, which is a straightforward application of the "direct approach". According to Simpkin, the kind of force dichotomy described above is "the proper marriage of maneuver and attrition theory." Operations where infantry and mechanised infantry have been the "ordinary forces", while the armoured formations have been the striking power of the "extraordinary forces" and the air force has been

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[75] Bellamy, p. 15 – 16 and Leonhard, p. 76.

Leonhard's opinions of attrition warfare are based on Dave R. Palmer's *Summons of the Trumpet: U.S.-Vietnam in Perspective*, Presidio Press, Novato, CA. 1978, p. 117.

the firepower of the "extraordinary elements" have been the most applied models of manoeuvre warfare.[76]

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[76] Simpkin, p. 93 – 115, Leonhard, p. 57 and Bellamy, p. 190.

In his book, Simpkin also analyses the advantages and disadvantages of both attrition warfare and manoeuvre warfare mathematically in Chapter 4. However, this is not the subject of this work.

See also Holden Reid, Brian: J. F. C. Fuller's Theory of Mechanised Warfare, Journal of Strategic Studies, December 1978, p. 295 – 312.

According to Holden Reid, Fuller did not see the direct and indirect approaches as separate concepts. The direct approach was a measure to create conditions for applying the indirect approach.

2. THE ROLE OF THE ART OF WAR IN THE ISRAELI DEFENCE FORCES

More than different views of the words the "art of war", there has been and still is a difference of opinion on the role of classic military theory in Israel. Some scholars and soldiers, who tend to see this question in a practical manner, stress the importance of the officers in the young IDF in the Israeli art of war. The other side is the group that tends to see the influence of the theoreticians of the art of war as being significant to the background of the development of the IDF. It seems that the truth lies somewhere in between.

According to Professor Wallach, those who could read foreign languages read the military theory classics already during the period of the *Haganah,* and several articles were also translated into Hebrew. However, before WW II and in the first years after the war, there were not so many officers who knew foreign languages. For those people, individual translations on the art of war might have been rather distant things. Practical tactical measures took first priority. Therefore, Professor Gelber holds that the classics of military theory were not usually appreciated among IDF officers during the first decades of Israel's independence, although such names as Sun Tzu and Clausewitz at the philosophical level of warfare and Jomini at the more practical level were known. Colonel Shaul supports this view, according to him almost all the most known classics were translated into Hebrew, at least partly. Nevertheless, they only played a small role in officer training, especially at the tactical level. Nor were works from past military theoreticians, according to Doctor Pa'il and General Simhoni, included in the officer training curricula, although many officers read them nevertheless.[77]

Despite the fact that the classics of military theory were seen as being far removed in the IDF, 20th century military thinkers were accepted and their ideas were adopted or applied. The most known of these were Liddell Hart and Fuller, but since the 1950s memoirs of famous (tank) commanders like Guderian, Rommel, Montgomery, Zhukov and Patton were also read. Their popularity was obviously based on the fact that these ideas were not so much philosophical but practical, and in addition they tried to analyse the future of war. According to Pa'il, the latter consideration was the reason why the experiences of foreign commanders were also read. Not only did Fuller and Liddell Hart analyse how to win the next campaign in a future war, they both

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[77] Interviews of Colonel (ret.), Professor Yehuda Wallach, Professor, Lieutenant Colonel (ret.) Yoav Gelber, Colonel (ret.), Doctor Meir Pa'il, Major General (ret.) Uri Simhoni and Colonel, Doctor Shai Shaul.

According to Shaul, there are several editions of the military classics in Israel and therefore the dates of the first publications are difficult to determine. Nevertheless, they were mostly published during the 1950s.

Also interviews of Lieutenant General (ret.) Dan Shomron and Professor Kadish and discussions with Doctor, Colonel (ret.) Hanan Shai.

According to Shomron, Clausewitz was accepted in Israel, but the details of his writings were not known.

According to Shai, today the interest in the art of war has increased in the IDF. According to Kadish, this is a consequence of the distance to the wars of the past. The proportion of theory tends to grow the farther one gets from the last war. According to this, the share of history in the IDF officer courses of today is bigger than in past decades and it is substantially closer to social theory than to the history of events.

also provided choices on surviving the war of "the few against the many" with mobile operations. In addition, Liddell Hart's "Strategy of Indirect Approach" enabled one to fight without incurring major losses of one's own. According to Shomron, Fuller's writings also led the Israelis to consider the problems of the command process in mobile warfare.[78]

Most Israeli scholars and military men concede Liddell Hart's influence on Israeli military thinking, but at the same time they limit it to the tactical and operational levels of warfare. One can mostly agree with this viewpoint. It is generally accepted that Liddell Hart's thoughts on mechanised warfare were typical issues for the operational level of warfare. In the Israeli context, this is the case for the "Strategy of Indirect Approach" as well. To the Israelis, indirect approach meant, according to Wallach, flexible thinking; a principle that could be applied on the battlefield. For example, Pa'il sees Liddell Hart's indirect approach as a basic item behind the pursuit of surprise. Therefore, Liddell Hart's thoughts became very popular in the IDF and, according to Gelber, the "Strategy of Indirect Approach" can be seen in the background of Israeli operational planning in both the 1948 and the 1956 wars. In 1967 this approach was almost dominant.[79]

Since the Six Day War, some Israeli scholars have also emphasised Clausewitz's theory behind Israeli military thinking, especially at the strategic level of warfare. Wallach, and Shai later on, both tend to see a Clausewitzian influence behind the Israeli strategy of being defensive at the strategic level and offensive at the operational level. In addition, Shai sees Clausewitz's thoughts as being more behind the concept of finding gaps and weaknesses in enemy defences and taking advantage of them than Liddell Hart's. In theory the idea of Clausewitzian influence at the strategic level sounds correct, though there is little factual evidence that proves that Clausewitz's theory was read on a wide scale in the IDF before the 1967 War. However, it is known that officers read Soviet military literature during the early years of the IDF, especially the literature that dealt with the Battle of Moscow according to Kadish. According to Wallach, the Israelis indirectly adopted the Clausewitzian concept of strategic defence, which meant offensive means at the operational level, in this way. In addition, in 1972 a German publishing house published Wallach's book *Kriegstheorien,* which was based on his lectures at Tel Aviv University. Therefore, in can be expected that his students – including officers as well – were to some degree aware of the ideas of the classical theoreticians that were presented in this book. In any case, it seems in a way that on the

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[78] Interviews of Colonel (ret.), Professor Yehuda Wallach, Major General (ret.) Uri Simhoni, Lieutenant General (ret.) Dan Shomron and Colonel (ret.), Doctor Meir Pa'il.

[79] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber, Professor Alon Kadish, Colonel (ret.), Professor Yehuda Wallach and Colonel (ret.), Doctor Meir Pa'il.

Most of the interviewees who joined senior level officer courses during the late 1950s or early 1960s remember that indirect approach was one of the central subjects in tactical and operational exercises.

whole this process is similar to the American style of interpreting the experiences of the Vietnam War in a Clausewitzian framework after the fact.[80]

The tradition of researching the art of war has not been very important in Israel. Nevertheless, the development of the foreign art of war was surveyed in the Training Department of the General Staff, although the human resources assigned to this task were not significant. Connected to this, IDF officers were also send abroad to study in foreign military academies from the early 1950s, mainly in England, the United States and in France. While in many cases the purpose was to study professional military matters, in the 1950s the student officers also adopted military thinking, especially from England. When they returned home, they applied these ideas as well. In the 1960s, when the Arabs had adopted Soviet operational principles and equipment on a larger scale, there was a change in a more practical direction. According to Adan, the main emphasis at that time was put on acquiring knowledge of the Soviet art of war. For this task, a team of officers, including Russian-speaking Jews, were made responsible for studying the Soviet way of war, according to Gelber mainly from the Soviet literature, and for developing concepts to cope with this threat.[81]

Since the establishment of POUM, (*Pikkud U-mateh*, the Command and General Staff College), in 1954, Israeli officers also started conducting operational analyses of domestic and foreign topics. According to Bagnall, military instruction at the Staff College was largely patterned on the British system, where models were also sought. Emphasis was more on individual participation than on formal instruction. Initially however, according to Adan, staff work; i.e., how to organise things that would have an influence on the battle, took first priority, but as soon as the IDF got experience in these matters, historical analyses were also adopted. The main emphasis was on two topics: the armoured battles of the Western Desert in North Africa during WW II and the battles of Stalingrad. The latter topic served as an example of culmination; the change from strategic defence to operational offence. Nevertheless, although the studies in POUM dealt with operational issues at a divisional level – sometimes also at higher levels – and although some of them

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[80] Interviews of Professor Alon Kadish, Major General (ret.) Uri Simhoni and Major General (ret.) Avraham Adan, discussions with Doctor, Colonel (ret.) Hanan Shai and Wallach, Jehuda L: Kriegstheorien. Ihre Entwicklung im 19. und 20. Jahrhundert, Bernard & Graefe Verlag für Wehrwesen, Frankfurt am Main, 1972, p. 5 – 7, 31 – 68, 195 – 248.

Wallach's book was also published in English and Hebrew. This book presents many of the most prominent military theoreticians and military thinkers. They are Jomini, Clausewitz, von Moltke the Elder, Schlieffen, Du Picq, Foch, Seeckt, Ludendorff, Fuller, Liddell Hart, Engels, Lenin, Mao-Tse-Tung, Giap, Guevara, Mahan and Douhet. In addition, one chapter was given over to nuclear war.

According to Kadish, the main influence of Soviet military literature was that it gave the Israelis ideas on territorial defence and a "people's army". In a way, Adan confirms this. According to him, one of the topics that was read about in the early years was Soviet partisan war.

According to Simhoni, the Israelis also read descriptions of the Battle of Kursk. In a way this supports Shai's theory of Clausewitzian influence at the operational level, too.

[81] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber and Professor, Colonel (ret.) Yehuda Wallach.

were also based on primary sources; according to Gelber they were not research works from the academic point of view. Pa'il confirms this by saying that the aim of these analyses was to educate the student officers to learn the basics of the art of war. It was also understood that history doesn't repeat itself and therefore historical experiences were not copied. For the Israelis, history and military theory were "not a well but a fountain", as Pa'il puts it. Analyses were used to produce combinations and new ideas. Instead, the role of the theory of the art of war has always been slight at the lower level of officer education; these courses have concentrated on practical items.[82]

The Israeli way of analysing the art of war can also be seen in their manuals. Already in 1943 during WW II, those Jews who served in the British Middle East Headquarters in Cairo started, according to Shai, to translate the British manuals into Hebrew. After Israel's independence this process was continued. From the early 1950s, manuals were written for the squad level up to the General Staff, though they mostly concentrated on tactical and technical issues. According to Gelber, the manuals in the early 1950s were also still translations of the British ones – which were correspondingly based on German models. In some technical issues for armour, several French manuals were also copied. The main aim of translating the foreign texts was to get a solid base for military training. Already before the 1956 War, the Israelis had, however, started to modify the translated manuals for Israeli conditions. Just before the war a number of orders for the co-operation between different arms, air-land operations, sea-land operations and also several issues concerning battle techniques – such as fighting in fortified areas and fighting against anti-tank defences – were written. However, these writings were obviously more orders that complemented the existing manuals than independent manuals. Manuals at higher levels were also written, but this process was not systematic and, in addition, there were disputes about the contents of the brigade level manuals, for example. Therefore Colonel Shaul defines these writings as being more concepts than manuals. For example, during the War of Independence IDF brigades had, according to Gelber and Kadish, their own manuals.[83]

According to Pa'il, the operational doctrine, "Combat Doctrine", was not written until 1964. Although this manual was classified as "confidential", since then parts of it can also, according to Shaul, be seen in many other manuals. Tactical manuals were not revised very often as well and, according to Adan, this process was not systematic until the late 1970s. Major changes derived from developments in weaponry that later on created pressure for organisational modifications. For example, according to Wallach the tactical manuals in the 1970s were still almost the same as those that were in use in

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[82] Interviews of Major General (ret.) Avraham Adan, Professor, Lieutenant Colonel (ret.) Yoav Gelber, Professor, Colonel (ret.) Yehuda Wallach, Lieutenant General (ret.) Dan Shomron, Doctor, Colonel (ret.) Meir Pa'il, Luttwak & Horowitz, p. 88, Bagnall, p. 56 and IDFArc., file 1/25/1954, file 5/25/1954, file 129/147/1961 and file 276/147/1961.

Models for senior officer training were also sought from other places than England, but on the whole it seems that Bagnall's statement is appropriate.

[83] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber, Colonel, Doctor Shai Shaul and Professor Alon Kadish, discussions with Doctor, Colonel (ret.) Hanan Shai and IDFArc., file 28/1529/1952 and file 129/147/1961.

the 1950s. The slight change in the manuals – both in substance and from a quantitative point of view – was a consequence of at least three things. First, the Israelis preferred verbal doctrine to a written one. According to Pa'il, this was an old Jewish tradition, verbal doctrine was more elastic and could be changed according to the situation. Second, the need to modernise manuals and concepts was avoided in the 1950s and 1960s by holding weekly meetings. Wallach and Adan mentioned in their interviews that at least in the infantry and Armoured Corps officers gathered together every Friday afternoon to discuss tactical issues. In these meetings, experiences, both their own and foreign ones, were considered. If needed, changes were made but this process didn't require new manuals, changes were transmitted by oral orders or written instructions. Third, the Israelis hesitated, according to Kadish, to throw away manuals that had proved to be suitable in the wars. Nevertheless, war experiences also provided reasons for changes in manuals, especially after the 1956 War when the IDF was changed from being an infantry army to a mechanised army and after the 1973 War when the all-tank army was modified to be a mechanised army.[84]

As was already mentioned, most manuals dealt with tactical and technical issues. Nevertheless, ideas about the art of war and the principles of war were also included in manuals, especially above battalion level. Opinions on the importance of the principles of war also vary greatly in Israel. However, some generalisations can be made. According to the Israeli senior officers who were interviewed, they were aware of the principles of war and these were often discussed in the tactical meetings. In addition, there is agreement that several principles have existed and still exist in the IDF and, according to Shaul, these principles were also written down in the manuals. According to Shai, they were even initially copied from the British manuals. Pa'il stresses that some central principles – like maintenance of aim, surprise and concentration – were adopted because they formed a basis for systematic thinking. In addition, indirect approach is mentioned in this context, but generally this is not seen as a principle of war; rather it is more a manner of thinking. In addition, according to Adan, Gelber and Simhoni, the principles of war were often used to analyse past operations. The view of their importance in the planning process also varies. Nevertheless, it can be supposed that only the knowledge of these principles had left their marks on the thinking of Israeli officers without mentioning the fact that these principles had been used to analyse operations. According to all this, it seems that the IDF has not been an exception in

[84] Interviews of Professor, Colonel (ret.) Yehuda Wallach, Colonel, Doctor Shai Shaul, Doctor, Colonel (ret.) Meir Pa'il, Professor Alon Kadish and Major General (ret.) Avraham Adan.

applying the principles of war, only the emphases have varied when compared to other armies.[85]

It seems that after the Six Day War the role of the study of the art of war in the IDF collapsed. Gelber tends to hold that it was the 1967 War that was the culmination point in the Israeli art of war, especially if this subject is examined from the philosophical point of view. Up to the Six Day War the Israelis had modified past military theories and foreign practises and manuals according to their own needs. After the success of the Six Day War, IDF officers began to imagine that they were military geniuses and instead of revising, copied their past experiences. As had happened in the PALMACH earlier, the Israelis started to believe that the IDF was a particularity unique to Middle Eastern conditions. Therefore, the art of war also had to be created independently. Although officers were still sent abroad, the operational results of these tours were seen as being less and less important, the trips were more prizes and a way of arranging personal details. This also coincides with the overall overconfidence in the IDF after the Six Day War. This manner of thinking led Israel to the verge of destruction in 1973. However, when the Israelis assessed the experiences of the Yom Kippur War, technological issues got priority. The result was that the IDF continued preparing for the last war, though the mistakes that were made were not as severe as those that were made before the Yom Kippur War. Nevertheless, from 1973 up to the 1990s, the introduction of new weapons technology and the possibility of lessening losses with these new techniques led, according to Adan, to the tendency to favour fire-power. This concept, which was adopted from the Americans, is generally dated to the resignation of the senior command generation in the IDF. However according to Gelber, the emphasis on firepower was not a consequence of this. It was more a consequence of avoiding losses of their own. In addition, it was thought that there was not room anymore for operational manoeuvre on the battlefields of the Middle East from a traditional point of view. Therefore, it was only in the 1990s, after the Persian Gulf War,

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[85] Interviews of Colonel, Doctor Shai Shaul, Doctor, Colonel (ret.) Meir Pa'il, Lieutenant General (ret.) Dan Shomron, Major General (ret.) Avraham Adan, Major General (ret.) Uri Simhoni and Professor, Lieutenant Colonel (ret.) Yoav Gelber, discussions with Doctor, Colonel (ret.) Hanan Shai and IDFArc., file 197/488/1955.

According to Adan, the central principles of war in the IDF have been: task or mission (maintenance of aim), surprise, initiative, aggressiveness, concentration of forces and indirect approach which is, however, more in the category of "the rules of war".

According to Shomron, the Israeli principles of war were parallel to the principles of other armies, only the emphases varied. The most important Israeli principles were maintenance of aim and initiative.

Professor Gelber tends to see the role of the principles of war as being more important above the tactical level. According to him as well, these principles were often discussed and they were also studied in senior level officer courses.

when interest in military theory steadily started to grow that it was understood that firepower alone is not enough to settle wars.[86]

[86] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber, Professor, Colonel (ret.) Yehuda Wallach and Major General (ret.) Avraham Adan.

According to Wallach, the Israelis imitated the Americans by emphasising firepower without taking into account that Israel and the United States acted in totally different political, geopolitical and military environments.

3. THE ORIGINS OF JEWISH DEFENCE

The basis of the Israeli art of war was laid down at the end of the 19th century when the Jewish population in Palestine began to grow. An increasing number of immigrants, spurred mainly by the pogroms of Tsarist Russia, moved to the Holy Land, which was under Turkish administration, in the 1880s. This immigration, which was the real start of several Jewish *aliyah* (immigration) movements into Palestine in the following decades, was the seed of the later acts of violence between Arabs and Jews. According to Martin van Creveld, the total number of immigrants in the first waves amounted to some 40,000 people, of which only half stayed in Palestine. In the background of these *aliyah*s was the international Zionist Movement (established in 1897), which sought a political and territorial solution to Jewish problems. The final goal of the movement was an independent Jewish state in Palestine. As soon as the Arab press published reports on the emergence of Zionism, some concern for the fate of Palestine as a part of the Arab world began to be articulated. In the beginning, however, the leaders of the Zionist movement believed that Arabs and Jews could live together in peace in the coming Jewish state.[87]

Between 1880 and 1914, the Jewish settlement in Palestine almost quadrupled to approximately 90,000 people, which was about 10% of the entire population of the area at this time.[88] This gradually caused a steadily growing number of disputes between the indigenous Arab population and the Jewish pioneers. However, up until the end of World War I these disagreements did not result in bloodshed. The activities of Arab gangs consisted mainly of robbing Jewish property. The gangs consisted of Bedouins and local Arab peasants, who wanted to profit at the settlers' expense.[89]

The Ottoman Turks did little to help the situation of the new Jewish settlements, so the Jews had to rely on hired local Arab and Circassian guards to defend their villages. This continued until 1904 when the second *aliyah* came to Palestine. These immigrants were also from Russia and Eastern Europe, and were influenced by the revolutionary movements in Russia. Above all, they were full of social and nationalist idealism. They built the first communal settlements: the *kibbutz*s and *moshav*s. It is significant that these

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[87] Alexander, Yonah (ed.): International Terrorism. National, Regional, and Global Perspectives, Praeger Publishers, New York 1976, p. 213 – 214 and van Creveld, Martin: The Sword and the Olive. A Critical History of the Israeli Defence Force, Public Affairs, New York 1998, p. 6 – 7.

See also Mehmood, Hussain: The Palestine Liberation Organization, University Publishers, Delhi 1975, p. 1 and Rothenberg, p. 14.

According to Mehmood, the principal Jewish plan to populate Palestine had its origins in the 1830s, when a German Jew named Hirsch Kalisher tried to finance settlements with the support of German and French Jewish leaders.

Rothenberg states that the original Jewish population in Palestine: the *Ashkenazim* from Europe and the *Sephardim* from the Middle East had no political ambitions.

[88] Aspects of Britain: Britain and the Arab – Israeli Conflict, HMSO Publication Centre, London 1993, p. 4 – 5.

[89] Alexander, p. 214 and Schiff, Zeev: A History of the Israeli Army (1870 – 1974), Straight Arrow Books, San Francisco 1974, p. 1.

groups also had some experience of defending themselves in improvised groups because they had protected their previous settlements in Eastern Europe from Russian Cossacks. Therefore, the establishment of the second *aliyah* settlements was also a turning point in securing the isolated Jewish villages. In 1907, these mainly Eastern European pioneers organised a small secret organisation called *Bar-Giora*. Two years later this group was expanded and renamed *ha-Shomer* (*Hashomer*, Watchman). *Hashomer* began to train the members of the settlements to use weapons, organised armed guards against banditry and were the first Jews to take the defence of their settlements into their own hands.[90]

Hashomer was no longer merely concerned with the defence of individuals and their property; rather it was interested in the defence of the Jewish community as a whole. Although not all the remote settlements were included in *Hashomer*, it was not a purely voluntary organisation. The members of the settlements were obliged to join its activities. From the very beginning, *Hashomer* emphasised quality over quantity. Its defence forces were divided into two elements: the active and the potential. The active element was always under arms and responsible for the day to day defence of the settlements. The potential element was to be a reserve force consisting of every able-bodied man. Its task was to support the active groups, but this goal was not achieved because of a lack of weapons. However, although the *Hashomer* system was largely defensive, the settlements also prepared to assist each other. Therefore, it was the seed of more organised defence organisations. This opinion is also shared by van Creveld. According to him, *Hashomer* was "the first to take the military road, not merely as a means to a military end, but with the explicit goal of shedding the supposed characteristics of the 'wandering Jew', and replacing him with a new, hardy, and courageous type who would take up arms in defence of himself, his settlement, and his country." Besides, *Hashomer* provided a source of tradition, inspiration and motivation to coming Israeli generations.[91]

The British also influenced early Jewish military thinking; even before their Mandate period. During World War One, the British recruited two different Jewish contingents: first in 1915 the Zion Mule Corps, a supply unit that served in Gallipoli; and in 1917 the Jewish Legion (*Gdudim*) of three battalions recruited from Jews in England, Canada, the United States and Palestine. The

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[90] Rothenberg, p. 15 and 21, Luttwak & Horowitz, p. 6 and Alexander (1976, p. 214.
See also Schiff (1974), p. 1 – 3.
According to Schiff, the first wave of settlers also organised groups of armed guards called *Shomrim* (also Watchmen). Actually, these are considered to be the first Jewish watchmen among the settlers. However, *Shomrim*s were only local and therefore the first real Jewish defence organisation was *ha-Shomer*.
Circassians were a minority Muslim group. They had left their native Caucasus in 1875 to avoid coming under Russian rule and had already arranged the defence of their villages in Palestine. The Arabs feared and respected them as fierce fighters. Bar-Giora was a Jewish warrior who distinguished himself in the rebellion against the Romans in A.D. 66 – 73 at Masada, which became the national symbol of defence, as van Creveld notes in: "Again Masada will not fall". See for example Schiff (1974), p. 3 and van Creveld (1998), p. 9 – 10.

[91] Bagnall, N. T: The Israeli Experience. A Study of Quality, Balliol College (Defence Fellow 1972 – 73), Oxford 1973, LH 15/5/304, part 3, p. 23 – 24 and van Creveld (1998), p. 17.

former unit was already disbanded in England during the war, but the latter participated in the June 1918 offensive against the Turks in Palestine and thereafter was stationed at Sarafand Camp near Jerusalem for demobilisation. Many future leaders of the *Yishuv* (the Jewish settlement in Palestine) enlisted in the British contingents and got a feel for military training. The most outstanding of them was Corporal David Ben-Gurion, who was to become the Prime Minister and Defence Minister of Israel during the early years of her independence. Although Ben-Gurion did not become, according to Gunther Rothenberg, a great military expert during his service in the army – as obviously was mostly the case with others, too – he gained a lasting respect for regular army procedures. Therefore, when Ben-Gurion assumed a leading role in the defence affairs of the Jewish Agency (the predecessor of the Israeli parliament, the *Knesset*) during the 1930s and also later when he became the Prime Minister and Minister of Defence of an independent Israel, his military experience would play a significant role.[92]

Three times, in 1921, in 1929 and between 1936 and 1939, the Arab threat materialised in the form of an overall attack on Jewish settlements and towns. The main Arab effort was put into a blockade of communications by guerrilla methods and was followed by assaults on the weaker settlements. The local British Colonial Administration was unable to stop the violence.[93]

The first wave of Arab terrorism in Palestine began spontaneously in March 1920 when Arab rioters attacked isolated Jewish settlements in the Upper Galilee. In April, these disturbances also spread to Jerusalem. Disturbances continued up until the end of 1921. These events were a shock to the Jewish community, which had voluntarily handed its armament in to the new authorities in late 1918 and in 1919, being convinced that the British would look after their security.[94]

The weakness and unwillingness of the Mandate authorities to protect the Jews strengthened their thinking about the defence against the Arabs. The April 1920 riots led to the formation of a new self-defence organisation. In June

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[92] Bar-Zohar, Michael: Ben-Gurion. A Biography, Weidenfeld and Nicolson, London 1977, p. 38 and Rothenberg, p. 21.

The Zion Mule Corps was formed largely from Palestinian Jewish exiles in Egypt. The unit was disbanded when it refused to participate in the Irish rebellion on the British side.
See also Bagnall, p. 32 and Perlmutter, Amos: Politics and Military in Israel 1967 – 77, Billing & Sons Ltd., London 1978, p. 9.
Both Bagnall and Perlmutter give credit to the British military training behind the thinking of several Jewish leaders.
According to Perlmutter, the Jewish Legion was disbanded after WW I because the British did not want to have an independent Jewish army in Palestine. They already had had experience with the behaviour of Jews in the Irish case.

[93] Ne'eman, Yuval: The Israel Army and the Sinai Campaign, Liddell Hart's correspondence with Colonel Yuval Ne'eman, paper without any dates but signed by Col. Ne'eman, written obviously in the late 1950s or early 1960s, LH2/18, p. 2 – 3.

According to Ne'eman, the British were perhaps not pro-Arab, but they were unwilling to put a stop to the violence for fear of incurring casualties of their own.

[94] Alexander, p. 218.

See also Rothenberg, p. 22 and Gilbert, Martin: The Arab-Israeli Conflict. Its History in Maps, Weinfeld and Nicolson, 4th edition London 1984, p. 10.

1920, the newly founded HISTADRUT (*Histadrut Haklalit shel Haovdim Haivriim*, the General Labour Federation) decided to allocate a fund for the provision of arms, to appoint a handful of permanent officers and to merge the local defence groups into a country-wide militia. This was to become the base of the *Haganah* (defence), the major forerunner of the Israeli Defence Forces.[95]

The first active *Haganah* group was formed in 1921 and consisted of soldiers of the Jewish Legion battalions, which were still stationed in Sarafand at the time. The *Haganah*'s main strength came from the Labour Party and from the exposed collective settlements in particular, where arms could be stored and some elementary training could be conducted. However, in its early phases the *Haganah* was not a homogenous organisation, although its ranks were open unlike its predecessors. The disputes were mainly over political issues. The first head of the *Haganah* was a 28-old veteran of the Jewish Legion named Yosef Hecht, who organised his staff according to the Soviet communist model of a committee of five men with two deputy members. The right-wing and religious Zionist groups disliked the idea of a "red" militia and even some left-wing settlers opposed the concept and refused to take their military activities seriously. In addition, the Mandate Administration began to restrict Jewish immigration to Palestine in the early 1920s. This placed the objectives of the *Haganah* in contradiction with those of the authorities. In 1923, the British banned the *Haganah* as an illegal organisation.[96]

The *Haganah* clandestinely sought countries that would agree to train its men, but without any practical results. However, they succeeded in acquiring money and arms from foreign supporters, mainly Jews, and arms smuggling into Palestine began. In any case, the *Haganah* remained a loose association of voluntary local defence groups in the early years of its existence, with the biggest groups in the cities of Jerusalem, Tel Aviv and Haifa. In practice it had no central authority. However, the idea of a Jewish armed force that would operate at the service of the whole community was born. From a purely military point of view, and considering what was to come, communal life in isolated settlements and the informality of the *Haganah* formed a basis for the tactical, organisational and leadership principles that were later adopted by the Israeli Defence Forces. In the settlements among the pioneers, a spirit of defence

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[95] Aspects of Britain: Britain and the Arab – Israeli Conflict, p. 69 and 71 and Luttwak & Horowitz, p. 8.

HISTADRUT was under the supervision of the Zionist Organisation and the Jewish Agency. The role of the Jewish Agency was defined in a document of The Council of the League of Nations, "Extracts from the British Mandate as being a public body for the purpose of advising and co-operating with the Administration of Palestine in questions of the Jewish population."

See also Gilbert, p. 10 and van Creveld, p. 21.

HISTADRUT was founded in order to encourage immigration, agricultural settlement, the growth of industry, and social welfare projects. According to Gilbert, it was founded in December 1920.

According to van Creveld, *Hashomer* was formally disbanded in May 1920, but its assets passed into the hands of the *Haganah*.

[96] Bagnall, p. 24 and van Creveld (1998), p. 21 – 22.

See also Alexander, p. 220 and Rothenberg, p. 23.

was born, which since then, according to van Creveld, has been one of the most important sources of motivation – *en breda*, no choice – in times of crisis up until the 1970s when the *Haganah*-educated soldiers retired from the army. The innovative defence principles were also a consequence of everyday life in a hostile environment with continually changing situations. These changes compelled *Haganah* members to improvise their tactics. Both of these features – motivation and innovation – have been typical of the IDF in the past decades; from privates up to the highest echelons.[97]

Although the military achievements in the 1920s were not dazzling, the *Haganah* was able to reinforce its organisation and to improve its organised defence. Commanders, who were responsible for drawing up a defensive plan, were designated for each town and settlement. Under the direction of these men, the positions that were to be manned in case of an emergency were selected and men were allocated among these positions, arms and other kinds of equipment were stored and, if necessary, distributed. A primitive communication system based on whistles, flags, flashlights and messengers between the various positions was built up. All this happened semi-legally, which indicated that the British were willing to close their eyes to some of the *Haganah*'s activities in order to save themselves some work.[98]

Training was in the hands of former sergeants and corporals from various armies of World War I. However, the majority were from the British Army. According to van Creveld, military experience at any level above the individual was entirely absent, with a few exceptions. In any case, the *Haganah* was able to produce several competent leaders in the 1920s, although it can be said that most of them were born leaders. Besides, they already had some kind of military experience. This list includes Yohanan Rattner, Eliahu Golomb and Yitzhak Sadeh. Rattner was a professor of architecture at Haifa Technical Institute and a former staff officer in the Imperial Russian Army, who later became the Chief of Staff of the *Haganah*. In addition, the tactically competent Eliahu Golomb would also become Chief of Staff of the *Haganah*. Sadeh, correspondingly, was a visionary Russian immigrant and veteran of both the Imperial Russian Army and the Red Army, who in subsequent years first developed Jewish small-unit tactics and later became commander of the first armoured formation in the IDF. In the mid-1920s, Sadeh was also in charge of *Haganah*'s first officer training course. Pa'il states that together Rattner and Sadeh formed "a complete military nature". Rattner brought knowledge of staff techniques and planning to the *Haganah* while Sadeh represented practise and innovation. In addition, according to Pa'il, both of these men knew at least German and Russian and obviously also French. They read a lot of German, Russian and French military theoreticians whose influence can be seen in Sadeh's writings, for example. Sadeh was also able to root his ideas in that young generation of immigrants who had already been born in Palestine. On

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[97] Schiff (1974), p. 10 – 11 and van Creveld (1998), p. 22, 24 and 33.

According to van Creveld, Jews have traditionally regarded military service as a thing to be evaded by every possible means. This was also one reason behind the unique military lifestyle that neglected manuals, but combined a spirit of great enterprise with rather lax discipline.

[98] van Creveld (1998), p. 26.

the whole, according to Gelber, in the 1920s the Jews read military literature that dealt with WW I and the years following that war when firepower and movement was separated.[99] However, except for this officer training course, no common policy in the tactical principles of various settlements can be discerned in the 1920s. The tactics and weapon skills were mainly consequences of some distinguished individuals like Sadeh, but were not spread nation-wide in this phase.

The second wave of Arab terrorism came in 1929. This was a turning point in the history of the *Haganah*. During these acts of violence, the *Haganah* started defence planning on a national scale for the first time. Responsibility for maintaining and expanding the *Haganah* was handed over to the Jewish Agency and supervision of the organisation was further vested in a civilian committee, the National Command, representing all the Zionist parties. Within this framework, the settlements were organised into a closely-knit organisation. Procurement of weapons from abroad accelerated and a clandestine arms industry began.[100]

This unity did not last long. The non-socialists didn't accept *Haganah*'s power over all Jewish settlements in Palestine. The socialist parties regarded the *Haganah* as the nucleus of a future army. This can be seen in the document "The Foundations of Defense" (*Osbiot Ha-hagana*) drafted by the head of the *Haganah,* Saul Avigur, in 1934. In this outline the *Haganah* was, according to van Creveld, seen as the sole organisation responsible for Jewish self-defence. The document also showed a need to combat any attempt to set up alternative groups. In practice this draft could not be implemented. The non-socialists were content to regard the *Haganah* as a mere auxiliary to the British army and police. The *Haganah* was split in 1931 as a consequence and the non-socialists established their own defence organisation, the *Irgun Zevai Leumi*, or the National Military Organisation, popularly known as ETZEL.[101]

In 1934, politics in the *Haganah* were displaced by military questions. The defence of settlements became the major concern. By inducting all citizens over the age of 17, both men and women, as members of the *Haganah*, a fair basis for a common defence was laid down. The training of individuals began: first a six-month basic training period followed by 1 year of active service, after which individuals were moved into reserve units. With the aid of foreign military manuals – obviously mainly British – a training course of 120 hours including drills, minor tactics, weapons handling and the firing of some rounds was

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[99] Rothenberg, p. 23, van Creveld (1998), p. 24 – 26 and interviews of Doctor, Colonel (ret.) Meir Pa'il and Professor, Lieutenant Colonel (ret.) Yoav Gelber.

See also Bagnall, p. 25 and Perlmutter (1978), p. 11 – 12.
The *Haganah* was also called upon to deal with newly arrived immigrants from Eastern Europe within the objectives of HISTADRUT. Therefore, the *Haganah*'s additional task was to teach immigrants Hebrew and basic information about the country. Bagnall bases his text on Maurice Roumani's unpublished thesis *The Contribution of the Army to National Integration* (University of London). Ever since then the IDF has continued the principle of educating newly arrived immigrants as well as conscripts in the early stages of their national service.

[100] Schiff (1974), p. 11 – 12 and Rothenberg, p. 24.

[101] Rothenberg, p. 24 and van Creveld (1998), p. 33.

started. Furthermore, exercises were planned to reinforce co-operation between settlements. Therefore, several covert march-manoeuvres were also directed to outlying settlements. In addition, primitive staff duties were already organised during the first half of the 1930s under the Tel Aviv branch, which was the largest of the local *Haganah* organisations. Others followed, with or without guidance from the "general headquarters" – a name that might be too strong a term in this context. The most important detail of this reform from the military point of view was the establishment of an intelligence service, and a counter-intelligence service. This gave the Jews the opportunity to anticipate the actions of their enemies, and was a primary precondition for the active defence principle that was adopted in the latter part of the 1930s. This institutionalisation can be considered to have been the basis of the Israeli Defence Forces.[102]

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[102] Schiff (1974), p. 13 and van Creveld, p. 34 – 35.

The other General Staff branches were a medical department and a legal department. See also Luttwak & Horowitz, p. 11.

According to various writers, all able-bodied men and women in the *Kibbutzim* and more isolated villages were in the *Haganah,* but its branches often existed only on paper in the towns.

The term active defence should also not be confused with the corresponding term of the late 1970s. In 1930, active (defence) can be seen as being the opposite of passive (defence).

4. THE ERA OF BRITISH INFLUENCE

Between 1936 and 1939 during the third and longest Arab uprising before World War II, the *Haganah* made its most dramatic developments. The measures adopted were both passive and active. During the seven years before 1936 the countryside settlements were fortified with underground bunkers, barbed-wire fences were erected, fortifications were equipped with searchlights, and internal and external communications were improved by using different methods like buzzers, signal lamps and messengers. When hostilities broke out, none of the *kibbutz*s or *moshav*s had to be evacuated. The active methods – which became increasingly common between 1936 and 1939 – were based on fast raids on enemy bands, aiming at destroying them and getting rid of the local threat. This also necessitated a particularly strong emphasis on the gathering of intelligence, as one had to know for certain where and when to strike. According to Bagnall, three measures were taken; two of them largely initiated and supported by the British. One can agree with this with the exception that the idea of mobile operations was at least born already to some extent when the British started to support the Jewish defence.[103]

4.1. *Nodedet*, the first step toward mobility

In summer 1936, when the acts of violence had started, the *Haganah* established several mobile units of volunteers from the Jerusalem area called *Ha-Nodedet* (patrols or wanderers) under the command of Yitzhak Sadeh to track down and ambush guerrillas based in the villages around Jerusalem instead of waiting passively for their attacks. According to van Creveld, however, the idea of mobile patrols had already been in existence since the early 1930s, when the *Nodedet* met every week to practice with or without orders from the Tel Aviv branch such activities as patrolling, minor tactics, river crossings and the like. Very few sources have remained from the *Nodedet,* but it seems the idea of favouring mobile operations instead of relying on local defence is several years older than the third Arab uprising and is purely of Jewish-origin. The rather peaceful period in the early 1930s – and also the illegal character of the activities – might explain the fact that more evidence of the early activities of the *Nodedet* has not been preserved. However, in summer 1936 when the hostilities between the Jews and Arabs intensified, the *Nodedet* already operated openly, according to van Creveld. As earlier in the 1920s, now also this all happened semi-legally, which indicated that the British were willing to close their eyes to some of the *Haganah*'s activities. At this phase the experiment of using the *Nodedet* did not convince the Jewish leaders who, according to Luttwak and Horowitz, did not achieve a consensus

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[103] Ne'eman, Yuval: The Israel Army and the Sinai Campaign, p. 2 – 3, van Creveld (1998), p. 38 and Bagnall, p. 25.

According to van Creveld, the organised defence was mainly financed by semi-official taxes.

on the usefulness of the *Nodedet* in the midst of the debates on the self-restraint policy.[104]

The *Nodedet* finally broke the tradition of passive defence. The main reason for this was its commander, Yitzhak Sadeh, who was an innovative tactician and emphasised more active means. This can be clearly seen in Sadeh's words, as quoted by Amos Perlmutter in his book *Military & Politics in Israel. Nation Building and Role Expansion*:, "Don't wait for the Arab marauder. Don't wait to defend the *kibbutz*. Go after him, move on to the offensive." Already in autumn 1937 *Haganah* – still backed by the British – authorised Sadeh to form additional mobile forces.[105]

4.2. The Jewish Settlement Police – the start of regular training

The second measure was the establishment of the Jewish Settlement Police (*Notrim* or *Gafirim*) in June 1936. This decision was backed by the British. Jews selected from a list of "reliables" were taken into this para-military force which consisted of three main elements: a number of regular units called Special Constables, a large number of unpaid "supernumeraries" and mobile units. In this connection, the country was also divided into ten regional commands, each however, under the authority of a British officer. In addition, according to van Creveld, the British also sought to make use of the remaining *Haganah* forces and in time almost the entire *Haganah* was incorporated into the Jewish Settlement Police. This is why David Ben-Gurion, as well as Sykes, regarded the establishment of the Jewish Settlement Police as the foundation of the Jewish army.[106]

The Special Constables were paid and equipped with small arms by the Mandate Government to carry out all local guard duties. They included both

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[104] Bagnall, p. 25, Luttwak & Horowitz, p. 13 and van Creveld (1998), p. 35.

According to van Creveld, the activities of the *Nodedet*s were more widely spread than just around Jerusalem. Private cars and motorcycles were also included in the training and, on the whole, van Creveld considers the motorised units to be highly mobile by the standards of the day.

[105] Bagnall, p. 25, Luttwak & Horowitz, p. 13 and Perlmutter, Amos: Military & Politics in Israel. Nation - Building and Role Expansion, Frank Cass & Co. Ltd., London 1969, p. 32.

[106] Allon, Yigal: The Making of Israel's Army, Universe Books, New York 1970, p. 8, Bar-Zohar, p. 88, van Creveld (1998), p. 39, Luttwak & Horowitz, p. 13 and Sykes, p. 140.

According to Luttwak & Horowitz, the Jewish Settlement Police were built up on the lines of the Ulster constabulary, the model of police forces created by the British in less secure colonies.

Luttwak and Horowitz hold that only the Special Constables and "supernumeraries" formed the *Notrim*. According to them, mobile units weren't included in the original *Notrim*. One can agreed with this. Reading between the lines this opinion can be found in van Creveld too.

See also Ben-Gurion, David: Britain's Contribution to Arming Hagana, Jewish Observer and Middle East Review, September 20, 1963, LH 15/5/311, p. 12 – 14.

Originally the name of the Jewish Settlement Police was the Jewish Supernumerary Police (*Notrim*), and before it was consolidated, the name was also the Jewish Settlement Defence. Originally the list of the "reliables" contained some 1,200 names. In autumn 1936, the number already stood at about 3,000 and at the end of the year it was almost 4,000.

British recruits and Jews and also had, in addition to their normal police duties, the responsibility for training the Supernumerary Police.[107]

After receiving weapons training from the British regular police (in Palestine), the Special Constables returned to the settlements with the rank of Lance-Corporal. They were put in charge of training the local settlers to defend their own settlements as the extra "supernumerary establishment" of the police. The "supernumeraries" were also allowed to use the weapons of the mobilised units for training and emergencies. However, they were allowed only a few rifles. The reason for this was that the Jews were known to have other arms from the illegal *Haganah* and, on the other hand, the British did not want to increase the amount of Jewish armament. Instead, according to Sykes, it was unlikely that the Mandate Administration ever wished this Jewish police to be a serious counter to the rebellion. In any case, the training of the Jews provided them with the opportunity to illegally extend both their military skills and the scale of the *Haganah*.[108]

In 1937, the *Haganah* ordered Sadeh – because of local and ideological disputes in its ranks, but also to have a more flexible concept against Arab terror – to form and train country-wide mobile forces from *Notrim*. This was the birth of FOSH (*Plugot Sadeh*, field companies). According to van Creveld, the *Nodedet* formed the skeleton of the mobile guards. Although the sources on this give contradictory information, it can be supposed that this was the case because Sadeh represented the continuation of mobile operations. According to van Creveld, the FOSH units totalled some 400 men in 1938; divided into six regionally based companies and finally into sixty squads. The *Haganah* revitalised its struggle against the Arabs. However, in April 1939 FOSH was disbanded as a result of the British curtailment of the *Notrim,* despite the fact that it had – along with other means – been quite successful in its operations and the violence had gradually faded away. However, the leaders of the *Haganah* at the time had already understood the value of mobile field units.[109]

After the dissolution, the veterans of FOSH were used in two ways. A core of Sadeh's chosen men formed a special unit known as POUM (*Plugot Meyuchadot*, special companies) for small-scale covert police, intelligence and

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[107] Sykes, Christopher: Orde Wingate, Collins St. James's Place, London 1959, p. 140.

[108] Ibid.

In addition, Sykes also speaks of the Jewish Railway Police, which seem to have been never called out according to him.

[109] Perlmutter (1969), p. 32, Rothenberg, p. 26, Creveld (1998), p. 40 – 41 and Luttwak & Horowitz, p. 13.

The number of FOSH members varies in different sources. Obviously the strength never exceeded one thousand. The explanation might be in the question of when the calculation was made.

Martin van Creveld also shows another obvious reason for the dissolution of FOSH. Because FOSH was totally Jewish, its operations were semi-legal and therefore merely tolerated by the British. It might also have become too large in British eyes, posing a possible threat in the future.

See also Ben-Gurion David: Britain's Contribution to Arming Hagana, p. 12 – 14.

Ben-Gurion calls the mobile patrols of the Jewish Settlement Police *Manin* or *Mishmarot Na'im*.

counterintelligence operations. Some were also ordered to take charge of the illegal arms industry. The rest of the FOSH members formed the skeleton of the so-called HISH forces (*Hel Sadeh*, field corps) that were established in 1940. Later after WW II, these permanent, but illegal HISH companies were expanded into battalions, which then formed the basis of the first Israeli brigades.[110]

Although the mobile units were operational for only a short period of time, their influence can be seen in the future IDF. While the officers of the Jewish Settlement Police were all British, many of the N.C.O.s and the rank and file served in a dual role as *Haganah* officers, especially in the mobile units. These officers – including Yigal Allon (later General and Minister of Defence), and the future Chiefs of the General Staff Yigal Yadin and Moshe Dayan – transferred the training they got to thousands of *Haganah* members. According to David Ben-Gurion, there already were over 14,000 armed men and women in ten reorganised territorial "police" battalions during WW II. Professor Wallach also connects the mobile guards to the Israeli Armoured Corps. According to him, the mobile guards and their successors formed the basis of the Israeli Armoured Corps and also paved the way for Israel's future military doctrine. Although from a tactical point of view the mission of the mobile forces was to protect the convoys between isolated settlements with armed lorries, the measures that were taken showed the emphasis of favouring surprise and seeking the initiative that later on can be seen as the first central ideas behind the budding operational doctrine.[111]

4.3. Special Night Squads – the roots of unconventional thinking

The third measure, taken by the British, – which was to have more influence on the future IDF than the Jewish Settlement Police, though merely an indirect one – was the foundation of a special unit, the Special Night Squads (S.N.S.), in spring 1938 under the command of a British Intelligence Officer, Captain Charles Orde Wingate. Up until today the opinions on Wingate's influence on the IDF have been, however, rather contradictory, but it seems that his role

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[110] Rothenberg, p. 31 and 45 and van Creveld (1998), p. 42 – 43.

When FOSH was disbanded, its papers were destroyed. This was done for protection from the British. According to van Creveld, it was also a precaution that had a political background. By destroying the papers, Sadeh, who had a socialist philosophy of life contrary to the *Haganah* supreme command, kept some of his selected men under his own control. This all might also partly explain the lack of sources concerning the *Nodedet*.
Later, some former FOSH members also formed the core of *Mossad*, Israel's secret service.

[111] Wallach, J. L: The Development of Israeli Armor Doctrine, LH 15/5/304, part 2, p. 1, Sykes, p. 140 and Luttwak & Horowitz, p. 13 – 14 and 17.

See also Ben-Gurion, David: Britain's Contribution to Arming Hagana, p. 12 – 14 and Schiff (1974), p. 17.
Schiff puts the total number of trained personnel in these supernumerary units as high as 22,000 men. The difference between him and Ben-Gurion becomes obvious from the armament. When Schiff sums up the total number of rifles, submachine guns and machine guns at approximately 14,000 (8,000 of British origin in the supernumeraries and 6,000 of *Haganah*'s own) this is the same number that Ben-Gurion gives.

behind Israeli military thinking has been greater than is usually acknowledged.[112]

It is generally accepted that Wingate has a significant role in the IDF's history. Usually his influence is, nevertheless, limited to the tactical level of warfare. According to Gelber and Pa'il, Wingate was especially an expert in guerrilla and counter-guerrilla warfare. In addition, defence with offensive principles was at least locally adopted already before Wingate's arrival in Palestine. Therefore, it has mostly been estimated that Wingate confirmed the already existing methods of the *Haganah* and, according to Gelber and Shaul, also gave the Jews self-confidence. In any case, opinions that stress a more important role for Wingate also exist. Wallach and Shai tend to see that Wingate also represented military thinking above the tactical level despite the fact that the S.N.S. was a small force. Doctor Shai mentions that in Wingate's actions the levels of warfare mingled with each other because Wingate defined the action of his force according to the aim and not according to the size of the force. Therefore, it is easy to see that the S.N.S., whose aim was to prevent the planned strikes of Arabs beforehand, already operated at a higher level of military art than its sheer size gives grounds to suppose. This manner of thinking, i.e., the flexible use of force with regards to the task, was to become rather typical in the IDF up to the 1960s. Although this can not be directly connected to Wingate's influence, the para-military character of the early IDF and its predecessors was, however, evident. Besides, Shaul also stresses Wingate's role behind Israeli military doctrine; according to him, Wingate was one of the forefathers of the IDF doctrine, though indirectly via his pupils – like Moshe Dayan – who later manned the central posts in the IDF. This is also the view of Moshe Dayan's daughter Yael. After the Six Day War Yael Dayan describes the origins of the military thinking of her father as follows: "Wingate's methods perhaps were the base on which my father built his own military theories and practices."[113]

According to Bond, Yigal Allon listed the three people who had had the greatest influence on the IDF at an annual conference at the Institute for Strategic Studies at Oxford. Their order was Wingate, Liddell Hart and Sadeh. Yigal Allon, as well as Yitzhak Sadeh, pictures Wingate as a military genius.

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[112] Charles Orde Wingate was born on 3 March 1903 in an officer's family with religious convictions. His education was strict, although modern and not in any way inhuman. In his youth he learned to love books and already became a well-read man in his early years. With his uncommon ideas, he was very unusual and controversial among his colleagues and superiors. Before coming to Palestine, he had already served in Sudan. In WW II he served first in Ethiopia and then in Burma. During the latter missions, he evolved his techniques of deep penetration behind enemy lines. He died at the rank of Major General on 24 March 1944 when his plane crashed in a Burmese jungle. See for example Sykes (1959) and a newspaper clipping from the Telegraph of 1 April 1944, LH 15/4/486.

[113] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber, Doctor, Colonel (ret.) Meir Pa'il, Major General (ret.) Avraham Adan, Professor Alon Kadish, Colonel, Doctor Shai Shaul, Professor, Colonel (ret.) Yehuda Wallach, discussions with Doctor, Colonel (ret.) Hanan Shai and interview of Yael Dayan, Spare, Autumn 1967, LH 15/5/315, part 2.

Yael Dayan describes her father's role model as follows: "Orde Wingate was another loved and admired friend hero of my father (the other was his mother Deborah)."
Professor Kadish also tends to see a link between Wingate and Dayan.

Zeev Schiff shares this opinion; according to him "Wingate left his mark as the single most important influence on the military thinking of the Haganah." Nevertheless, however important Wingate was, he was not the only one whose teachings and principles can be seen in the background of Israeli military thinking. As Yitzhak Sadeh wrote about Wingate: "Before he came into Palestine we did the same things but on a lesser scale and especially with lesser skills." According to Wallach, Sadeh, however, respected Wingate because of his unconventional military thinking. Luttwak and Horowitz and Ne'eman also emphasise Wingate's influence behind the *Haganah*'s performance, but they, too, stress that Sadeh had already applied the principles of active defence before Wingate. One can agree with this, especially, when it is a question of the tactical principles of the IDF. The operations of Sadeh's forces were very similar to the activities of the Special Night Squads. It can also be supposed that the interaction between Wingate and Sadeh was obvious if and because the thinking of these two men ran along parallel lines.[114]

On the whole, Sadeh's influence has partly been overshadowed by Wingate. There are several reasons for this. First, Sadeh's political background was a factor that obviously affected his career. At least according to Pa'il, Ben-Gurion didn't appreciate Sadeh. Therefore Sadeh's experience was partly neglected because the same tactical principles that he emphasised were successfully tested by a professional British soldier, who was more reliable in the eyes of the *Haganah*'s political leaders. Second, according to the American military analyst Trevor Dupuy, Sadeh's name has partly been set aside because his later performance as a battlefield commander was not so outstanding. During the Israeli War of Independence, the performance of the inadequately equipped and trained first Israeli armoured brigade, which was under the command of Sadeh, was not very good, though Sadeh was not the cause of the setbacks. In any case, it is true that many of the future leaders of the IDF fought under the command of both Wingate and Sadeh: the best known of them being Moshe Dayan. Because of the similarities between *Nodedet* and the S.N.S., and partly because of the scantiness of sources about Sadeh's forces – within the scope of military art – the role of Wingate is studied in greater detail in this context.[115]

Captain Wingate arrived in Palestine in autumn 1936. He then made himself thoroughly familiar with the situation. However, Wingate was not totally unfamiliar with Palestine. In 1926, he had written an essay on General Allenby's campaign in Palestine in 1917, in which he analysed the superior

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[114] Bond, p. 246 – 247, Allon Yigal: Wingate's Heritage, Jewish Observer and Middle East Review, October 17, 1969, LH 15/ 4/486, s. 17 – 19, Schiff (1974), p. 17, interview of Professor, Colonel (ret.) Yehuda Wallach, Ne'eman, Yuval: The Israel Army and the Sinai Campaign, p. 2 – 3 and Luttwak & Horowitz, p. 15 – 16.

Bond does not mention when Allon visited the Institute for Strategic Studies. It might have been in October 1975, at least at that time Allon was in London.
The idea of active defence should not be confused with the 1970s term "active defence".

[115] Allon (1970), p. 9 – 10, Rothenberg, p. 26, Schiff (1974), p. 17, Dupuy, Trevor, N: Elusive Victory. The Arab-Israeli Wars, 1947 – 1974, Kendall/Hunt Publishing Company, Third edition, Dubuque Iowa 1992, p. 5 and interview of Doctor, Colonel (ret.) Meir Pa'il.

value of manoeuvre and concentrated effort when fighting on interior lines. Interestingly, these overall concepts – which were neither new nor Wingate's own ideas – have also been the leading principles in Israeli strategy and operational art. There is, however, no evidence of Wingate's influence on this issue.[116]

Finally, in June 1938 Wingate submitted his report *Ways of Making His Majesty's Forces Operate at Night with the Objective of Putting an End to the Terror in Northern Palestine* to his superior, commander of the British forces in Palestine (G.O.C. Palestine), General Sir Archibald Wavell (later Field-Marshall). Wavell, who according to Sykes was an open-minded soldier and neither pro-Arab nor pro-Jew, shared some characteristics with Wingate. Both men were progressive-minded officers and sought solutions to military problems indirectly and with manoeuvre so as to avoid sheer power solutions. In this report, Wingate stated that British counter-terrorism operations had been ineffective for two reasons. The first was a lack of roads, which made the use of mechanised troops impossible or at least delayed their effect. The second was that the size of the troop and air force components that were being used in counter-operations usually revealed the operations from the very beginning. To address this problem, Wingate proposed that the army should engage in night operations against the rebellion as a part of its regular duty.[117]

After his report, Wingate was allowed to implement his thoughts. He formed a group of small armed bodies drawn from the loyal sections of the population which, in case of Arab attack, could render every homestead capable of defence for the short period that would elapse before a regular unit could arrive. The patrol force, known as the Special Night Squads, was born and became operational in June 1938.[118]

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[116] Sykes (1959), p. 51 and 127.

A force is said to be operating on interior lines when its operations diverge from a central point and it is therefore closer to separate enemy forces than the latter are to each other. Interior lines benefit a weaker force by allowing it to shift its main effort laterally more rapidly than the enemy.

[117] Sykes, p. 53, 109 – 110 and 136 – 137, van Creveld (1998), p. 39 and Horrocks, Sir Brian: Newspaper cut from The Listener, June 4, 1959, p. 977 – 979.

Although some presumed so, Wingate was not a Jew, either wholly or in part, but he became a keen Zionist during the last months of 1936. However, from the first moment the local situation showed Wingate that he had been seriously misinformed about the Jews. They did not have the upper hand as was commonly assumed in Britain.
See also Tulloch, Derek: Wingate in Peace and War. An account of the Chindit Commander, Tonbridge Printers Ltd., Kent 1972, p. 10.
According to Major General Tulloch, Wingate's lifetime mission was to be a Zionist. General Tulloch was one of Wingate's closest friends and his deputy in Burma.
Sir Brian reported his interview of Colonel H. E. Bredin, who was Wingate's second in command in the Special Night Squads, in his article. According to Colonel Bredin, most British officers in the 1930s were pro-Arab.

[118] Sykes, p. 138 – 141, Allon (1970), p. 8 – 9, van Creveld (1998), p. 40, Ne'eman, Yuval: The Israeli Army and the Sinai Campaign, p. 2 – 3 and Sugarman, Sidney: In Memory of Orde Wingate, 1903 - 1944. Israel's debt to a Great British Soldier, Jewish Observer and Middle East Review, October 17, 1969, s. 12 – 13, LH 15/4/486.

According to Sykes, many of the men who were trained at Ein Harod, where the S.N.S. headquarters was located, remembered Wingate's first words to them: "Our purpose here is to found the Jewish army." The trainees also recalled that Wingate considered the Jewish members of the S.N.S. to be a cadre, from which the military forces of Israel would grow in due time. However, Wingate encountered difficulties at first. The least expected problem was getting the Jews to co-operate. In the very beginning the Special Night Squads were too small and their weapons too poor to accomplish their appointed task. Therefore, Wingate sought the help of the *Haganah*, but because he was a British officer he was suspect among the ranks of the *Haganah*. Finally, with the support of Dr. Chaim Weizmann, who was to become the first president of the State of Israel, Eliahu Golomb from the *Haganah* and Moshe Shertok from the Jewish Agency, Wingate succeeded in assuring the leaders of the *Haganah* of his sincere intentions and the work began.[119]

When the organisation of the S.N.S. was completed, there were four S.N.S. posts, each with two platoons. The stations of the S.N.S. were very unlike British military camps. Their character was much more like the *kibbutzim*. However, Wingate underlined the importance of discipline – self-discipline might be the right word in this context – including respect for the adversary. The S.N.S. consisted both of British soldiers, five officers including Wingate and thirty-six volunteers, and of some 100 Jews from the *Haganah* and the Supernumerary Police. Wingate was able to form nine patrols from this force. Later, after the success of their operations, Wingate also decided to add a cavalry wing to his army because the patrols had succeeded in encircling manoeuvres in all their operations, but they had not often succeeded in pursuit. This never happened in Wingate's fairly short career in the S.N.S., but the idea of regional forces and operative mobile forces was to remain and was later applied in the force dichotomy of the IDF. The untypical para-military order, ostensible lack of discipline, and the unofficial custom of using first names was also to stay. Interestingly, it was, according to Sykes, also already in this phase that Wingate was thinking about a 1,000 men force behind enemy lines. This shows that Wingate was aware of the concept of deep penetration and obviously also discussed this with the Jews, though the extent remains unclear.[120]

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[119] Sykes, p. 143 – 145, 155 and 175 – 176 and Tulloch, p. 45 and 47.
According to Tulloch, Wingate's purpose was to found a Jewish Army and his tour of duty in Palestine proved to be by far the most important event in his life and even in world history.
In public, Wingate never made such an indiscreet statement but, according to Sykes, the squad members understood this and undertook their tasks consciously in that spirit.
Zvi Brenner, the former head of the *Haganah*, also remembered Wingate's statement; Wingate's dream was to lead the selected men of Israel into a battle identical with Gideon's and his chosen men. According to Sykes, this biblical connection can be seen in different contexts in the S.N.S.; e.g., in where its platoons were located.

[120] Sykes, p. 149, 152, 154 and 170 – 171, Sugarman, p. 12 – 13, Allon, Yigal: Wingate's Heritage, p. 17 – 19, Hacohen, David: The History of a Historic Friendship, Jewish Observer and Middle East Review, October 17, 1969, LH 15/4/486, p. 12 – 13 and Mosley, Leonard: Banished - from the land he loved as the whisper spread "disloyal", The Sunday Express London April 24, 1955, LH 15/5/300, p. 2.

S.N.S. squad members, including the British, wore *kibbutzim* uniforms.

Although Wingate rooted the elements of a military institution in the *Haganah*, his tactical influence is why he is remembered in the IDF. Nevertheless, according to Pa'il, the Jews didn't blindly copy Wingate's teachings; rather they more adapted and fitted them to their own mentality and situation. Wingate himself was responsible for training. He organised the training courses for the recruits of the S.N.S with his counterpart in the *Haganah*, Yaacov Dostrovski (Dori, later the first Chief of Staff/IDF). In lectures and long discussions Wingate presented his ideas on warfare to the squad members. From the very beginning, he taught the settlers that defence must never be passive. This reinforced the offensive ideas that were already adopted in Sadeh's forces, and finally confirmed the turning point from passive self-defence to active operations. In addition, training and operations in the S.N.S. were not sharply divided; indeed, squad members were trained to a large extent through taking part in operations. This was a habit that became a custom in the future IDF, as was the evaluation process of N.C.O.s and officers. This concept was based on the idea that command qualities would be revealed in field operations. Anyone lacking daring, courage and ingenuity in a battle or the willingness to lead his men was neither given a command appointment nor promoted, no matter how skilled an administrator or instructor he was. In the following decades Wingate's heritage was transferred to the IDF by his subordinates, among whom were several future Chiefs of Staff of the IDF and many other significant soldiers. The contents of the S.N.S.'s training can be seen in Appendix 3.[121]

"Gideon tactics", as Colonel Ne'eman calls the tactics that Sadeh had applied in the *Nodedet* and FOSH, fitted entirely with Wingate's own thoughts and on the whole, according to Ne'eman, greatly improved the military performance of the *Haganah.*[122] Yigal Allon, who was to become the commander of the WW II-era Jewish defence organisation called PALMACH,

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When Hacohen wrote this article, he was the Chairman of the Knesset Foreign Affairs and Security Committee.

Later in Burma, Wingate led his Chindits deep behind Japanese lines. This force was not a special force trained for special tasks but more an ordinary force trained to fight in the enemy's depth.

[121] See also Bredin: Return to Ein Harod, Jewish Observer and Middle East Review, October 17, 1969, LH 15/4/486, p. 20 – 21, Sykes, p. 151, Bagnall, p. 37 – 38 and 57, Mosley, p. 2, Ne'eman, Yuval: The Israel Army and the Sinai Campaign, p. 2 – 3, Ben-Gurion David: Our Friend: What Wingate did for us, Jewish Observer and Middle East Review, September 27, 1963, LH 15/5/311, p. 15 – 16 and interview of Doctor, Colonel (ret.) Meir Pa'il.

Among Wingate's subordinates were such future IDF Generals as Yigal Yadin, Moshe Dayan, Haim Laskov, Yaacov Dostrovski (later Dori) and Avraham Yoffe. Yigal Allon did not belong to the S.N.S. He was a member of the Jewish Settlement Police (Field Forces Company), but took part in joint operations with the S.N.S. and the Settlement Police, where, according to him, Wingate's influence could also be clearly seen. See for example Rothenberg, p. 26, van Creveld (1998), p. 40 and Allon, Yigal: Wingate's Heritage, p. 17 – 19.

See also Williams (1989), p. 56.

Today, the only clear difference from the S.N.S. training principles is that there is more time to train conscripts because peacetime operations in border areas are performed by older age group units. Wingate did not have this luxury.

[122] Ne'eman, Yuval: The Israel Army and the Sinai Campaign, p. 2 – 3.

summarises the characteristic features of Wingate's approach to the military doctrine and tactics of the *Haganah* as follows:

1. The personal example of the commander. This was rooted in the minds of the squad members in bold operations and in long and exhausting marches. The personal example of the commander was later known as the "follow-me" principle in Israel.
2. Discipline. This must be interpreted as purposeful discipline.
3. The idea of operations. Wingate was meticulous in preparing plans before operations and made sure that everyone knew and understood the foundation and idea of the operation. Nevertheless, he also preferred improvisation in accordance with the changing conditions of battle. He therefore gave authority to his subordinate officers and trained them to be leaders capable of assuming command, of making up their own minds and of taking their own independent decisions on a fluid battlefield. These principles, similar to the German *Auftragstaktik*, especially to that of operational freedom, have since been absorbed into the IDF in various ways. Although it can not be proved that Wingate's mission oriented tactics has their origins in German ideas, according to Sykes, Wingate was rather well aware of the German military art and in Wingate's time the German model of mission oriented command, which was based on their *Sturmtruppen* offensives in WW I, was the only existing one in the world.[123]
4. Concentration of forces. Wingate perceived the importance of concentrating forces on the major objective, even under the conditions of anti-guerrilla fighting, while at the same time he was skilled in managing fragmented and scattered forces when the circumstances made it necessary. The centre of gravity could be reached at a place or time, and it was not necessary to put one's own force up against enemy strong points, actually it should be avoided by seeking other solutions. It is, however, unknown if Wingate also thought about and taught these principles for application in the larger context of conventional warfare.
5. Exploitation of surprise and mobility. Both of these principles have been typical traits of the Israeli art of war and have been written about in the IDF's doctrine since the early 1950s.
6. The mental aspects of warfare. This included both exploitation of the enemy's fears, like fear of the dark, and motivation of one's own forces. Wingate paid a lot of attention to motivation, which in his case was sought from the Bible, also later used by many Jewish commanders. Ever since then and especially since the genocide of the Jews during WW II, the basis of the mental motivation in the face of the enemy has been clear up to the Yom Kippur War (inclusive), *en breda*, no choice.[124]

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[123] Sykes, p. 51 and Dyster, p. 221.

Wingate's knowledge of the German military art is revealed in a statement that he made in a discussion with his colleagues in autumn 1939 after his return from Palestine. "I tell you the French are no good at all. The Germans will break through them as soon as they attack."

[124] Allon (1970), p. 10 – 11 and 16 and Allon, Wingate's Heritage, p. 17 – 19.

The mental aspects of the Israeli military art are explained in many sources. For example, their role in the background of the Israeli art of war can be seen in the following books: Adan

Martin van Creveld has also listed the central principles of Wingate's tactics. The interpretations of van Creveld, made more in today's terms than Allon's, coincide in many ways with the principles of manoeuvre warfare. Everything was based on good reconnaissance and intelligence, which in turn was based on an intimate familiarity with the countryside, including languages. Long approach marches were intended to take the enemy by surprise, as was faking an attack at one point with a variety of tricks and attacking at another with a short, sharp attack delivered with maximum firepower. These latter points were also meant to confuse the enemy and put him off-balance. In addition, Wingate's preference for night action was striking. Night action was especially intended against the belligerent with weak firepower.[125]

The fact that Wingate was more than a tactician to the Jews is also revealed in Yigal Allon's article *Wingate's Heritage*: "Soon after Wingate's leave, former platoon commanders of the *Haganah* were in charge of brigades and divisions, but loyal to the principles of that Wingate taught; it was a mixture of unconventional approach, guerrilla warfare as well as conventional warfare, where we dispersed and massed our forces always trying to get the initiative by surprise." In addition, Wingate's force dichotomy; the idea of establishing settlements in strategic areas, while at the same time using mobile troops to transfer the battle to enemy territory, fascinated the *Haganah* leaders. According to these principles, the defender would not dig in and surrender the initiative to the enemy; rather he would expand the battlefield by expanding onto the enemy's soil. In this concept, armed strongholds would provide cover for mobilising and employing mobile troops. The core of this idea was already adopted in the *Haganah* before independence. Since the 1950s, para-military settlements and territorial forces have represented strongholds and the operative formations of the IDF have been the mobile striking power.[126]

On the whole, from a time perspective, the S.N.S. story in Palestine was quite short. General Sir Robert Haining, who succeeded General Wavell as General Officer Commanding Palestine, was biased against the S.N.S.'s independence. Together with the growth of British forces in Palestine and with

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Avraham: On the Banks of Suez, Arms and Armour Press, London 1980, p. 182 and 257, Dayan Yael: A Soldiers Diary, the Camelot Press Ltd., London 1967, p. 14 and 87 and van Creveld (1998), p. 124 – 125 and 151. These authors emphasise the influence of history on Israeli troops on the battlefield. Biblical events, as well as old battle songs from previous wars, have been used to reinforce the pioneering spirit of forefathers and also to encourage men on the eve of battle. The *en breda* term is used by van Creveld.

[125] Van Creveld (1998), p. 40.

Also interview of Colonel, Doctor Shai Shaul.
According to Shaul, the most important of the principles that were adopted from Wingate were offensive, initiative and unconventional means, like night fighting.

[126] Allon, Yigal: Wingate's Heritage, p. 17 – 19 and Maclean, Sir Fitzroy: The Unsolved Mystery, Daily Telegraph 20.4.1959, LH 15/4/486.

Allon's habit of calling the use of darkness the "bold man's weapon" also shows the intuitive manner of seeking solutions to military problems.
The idea of covering strongholds was not new, the Romans had used retired soldiers in defence missions on the outskirts of the Empire while at the same time they were independent farmers. Later after WW II the French also established strongholds in Indochina, but without success because they didn't have enough mobile troops.

the stabilisation of the riots, the S.N.S. was dispersed in December 1938 and its men were transferred to a passive role in the Jewish Settlement Police, and to missions that had already been implemented before spring 1938. By then, however, the base for Israel's army was already laid down. According to Yohanan Rattner, Wingate's vigorous leadership, skilful training, and the fact that he proved that Jews were superior in courage to Arabs, gave the little force a sudden irresistible and dynamic unity. In addition, according to van Creveld, the era of the S.N.S. was one of the last times an armed force belonging to a developed country obtained good results in a low-intensity crisis. In this way, the S.N.S. gradually became, together with FOSH, what Wingate secretly intended, the beginnings of a Jewish army, which was also acknowledged by Jewish leaders in the 1970s.[127]

4.4. The Liddell Hart connection

The question of Liddell Hart's "Strategy of Indirect Approach" and deep penetration, and Wingate's role in all this is also interesting. It is well known that Wingate applied the principles of deep operational penetration with success both in Ethiopia and in Burma. Less is known about whether Wingate already understood the operational value of this approach during his S.N.S. career, although some hints exist, as already discussed earlier in this chapter. Professor Kadish, for example, doesn't confirm the connection between *Haganah*, Wingate and Liddell Hart because of the small operational area and small scale of the S.N.S.'s operations, though he admits that both of these names – Wingate and Liddell Hart – are "codes" that contain a number of different things.[128]

According to Major General Tulloch, Wingate, as a learned man, was, however, well aware of the thoughts of the military theoreticians and analysts of his time, especially those of Liddell Hart. He also followed developments in the German army. In Burma, for example, Tulloch and Wingate often had philosophical discussions on Liddell Hart's ideas about deep penetration, and the question of Palestine was also touched on. While the S.N.S. can be described as having been a counter-guerrilla unit, which operated mostly at the tactical level, its methods can, nevertheless, be equated to the concept of

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[127] Sykes, p. 143 – 145, 155, 185, 175 – 176, 194 and 545, Tulloch, p. 45 and 47, van Creveld (1998), p. 41 and Howard, Michael and Hunter, Robert: Israël and the Arab World: The Crisis of 1967, Adelphi Papers N:o 41, October 1967, Quicks the Printers, Clacton-on-Sea, England 1967, p. 2.

British forces in Palestine consisted of 18 infantry battalions at the end of 1938.
In early 1939, the British had a secret plan (unconnected to the Jewish army project) to recruit Jews from Central Europe to carry out demolition raids on oil refineries used by the German Army. Wingate was asked by both the British and the Jews to take command of these operations. Wingate refused, because he regarded himself as a soldier, not a secret agent. The other reason was that this kind of action would have confirmed the myth that Jews were untrustworthy people. However, this secret force was established later during the war, without Wingate, who left Palestine in late spring 1939, first for Ethiopia and later for Burma.

[128] Interview of Professor Alon Kadish.

indirect approach and today also to the principles of manoeuvre warfare that are linked more above the tactical level. It is also known that Wingate had ideas for the expansion of his force. Therefore, it is obvious that Wingate already discussed the subject of larger operations with larger forces with the Jews, and in this context the idea of deep penetration might also well have been raised although no strict evidence of this has been revealed, excluding his ideas of having that 1,000-man Jewish force behind enemy lines. In any case, the similarities of these cases are striking, with the exception that Wingate applied the principles of deep penetration on a lesser scale in Palestine than he did in his later years in Ethiopia and Burma, but ideologically the base seems to have been the same. In addition, according to Bond, Sadeh was also in agreement with Liddell Hart on most issues which might also reinforce this link.[129]

After his return from Palestine, Wingate met Liddell Hart and left him his memorandum of S.N.S. theory and practice. In these discussions at the end of 1938, Liddell Hart didn't wonder about Wingate's poor success in applying these principles. They were extraordinary in British military thinking in those days. In Palestine, however, according to Wallach, even before the Israeli Defence Forces were established, much attention was given in the *Haganah* to Liddell Hart's theory. In the *Haganah,* Liddell Hart's theory was seen as the solution to the war of the few against the many, which was also the base for Wingate's teachings. This reinforces the connection between, Wingate, Liddell Hart and the Jews.[130]

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[129] Major General Derek Tulloch's letter to Sir Basil Liddell Hart 24 November 1965, LH 15/5/300 and Bond, p. 246.

Tulloch writes in his letter to Liddell Hart: "He (Wingate) admired your theories and discussed them with me on occasions... and his line of deep penetrations were exactly the same lines of yours adopted to different weapons and terrain."
Also interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber and Professor, Colonel (ret.) Yehuda Wallach.
Gelber doesn't see Wingate's influence on the background of the IDF's concept of deep penetration as being important because the S.N.S. didn't fight against a conventional army. The statement on the S.N.S.'s role is true, but it doesn't invalidate the fact that the idea of deep penetration might have been discussed already during Wingate's sojourn in Palestine. In addition, deep penetration should not only be linked to conventional warfare. Wallach, instead, tends to see Wingate's role as being more decisive because it didn't represent the typical British military thinking at that time. As a consequence, the Jews began to listen to Wingate.

[130] Sykes, p. 192, Liddell Hart's letter to Mr. Winston Churchill 11 November 1938, LH 15/5/300 and Wallach, J. L: The first anniversary of Liddell Hart's death, an obituary of Sir Basil Liddell Hart, correspondence with Lady Liddell Hart, LH 2/22, p. 5 – 6.

According to Sykes, Liddell Hart transmitted Wingate's memorandum to Winston Churchill, who had expressed interest. In the letter Liddell Hart tells Churchill that "the principles Wingate had used in Palestine might interest you as a soldier ... unfortunately he had not the possibility to enlarge this success."
Professor Wallach mentions that Liddell Hart discovered the re-birth of Jews in Palestine when General Wavell wrote to him (Liddell Hart) that "here a breed of Jewish fighter is growing within the S.N.S.", an idea that was also expressed by Wingate in one of his first letters to Liddell Hart.
Wallach's article *The first anniversary of Liddell Hart's death* does not have a date. It was, however, sent to Lady Liddell Hart in spring 1971.

The first documented connection between Liddell Hart and the Jews dates back to 1938 when a *Haganah* delegation, consisting of David Ben-Gurion, Dr. Chaim Weizmann, Eliezar Galili, Arther Lourie, Moshe Sharett and Moshe Shertok met Liddell Hart in London. The aim of this tour was to meet military experts specialising in British defence problems in Palestine. However, the principal idea behind the visit was to establish a Jewish army within the Imperial defence framework in Palestine. Liddell Hart's role in this plan was as an adviser, which at least shows that he was known among the Jews. In any case, there are no references in the documents to discussions of military theory. Mainly it was a question of how the Jewish forces in Palestine would be organised and armed. According to Brian Bond, Liddell Hart later described this meeting as follows: "From the time I first met the budding leaders of Israel, I found there a grasp of military problems and new military ideas comparable to that of the Germans, and in some respects surpassing theirs." However, it should be remembered that when Liddell Hart gave these answers, he thought that the Jews would form a part of the British Army in Palestine. There was no question of an independent Jewish state and army. Despite its positive spirit, the contents of the memorandum were not implemented. However, after the negotiations with Liddell Hart, Dr. Weizmann put forward two proposals: one for the establishment of an arms factory in Palestine, and another for the raising of an army of two hundred Palestinian Jews to form the cadre of a Jewish army. Although this idea had distinguished supporters in Britain, among them General Wavell and Commander-in-Chief Middle East, Field Marshall Sir Edmund Ironside, the plan was overridden. It was only at the end of WW II, in autumn 1944, when the first Jewish formation, the Jewish Brigade Group, was established.[131]

4.5. PALMACH – a dual role strike force

After 1937 the *Haganah* began to operate as the general staff of a large scale army. In July 1938, Yonahan Rattner was appointed the first Chief of Staff.

See also Collins, John M: How Military Strategists Should Study History, Military Review, August 1973, p. 31 – 44.
According to Colonel (U.S. Army) Collins, Sir Archibald Wavell was also a keen advocate of Liddell Hart.

[131] A letter from Eliezar Galili to Moshe Shertok. Attached to the memorandum The Place of Eretz Israel within the Imperial Defence Framework of Middle East, LH 15/5/304, part 2, p. 1 – 6.

Norman A. Rose found Galili's and Shertok's memorandum in the Weizmann Archives in Israel 1966 – 67, when he was preparing his doctoral thesis. He sent copies of the letter to Liddell Hart, who remembered this meeting but was not aware of the existence of this memorandum. The Jewish delegation evidently appreciated Liddell Hart's ideas because they wanted to have him as a guest in Palestine to familiarise him more with the prevailing conditions. This didn't occur until two decades later in 1960.
See also Bond, p. 242 and Sykes, p. 219 – 220 and 222 – 225.
According to Bond, the Israelis already met Liddell Hart in 1937. The participants or the subjects of this summit are not mentioned.
Sykes mentions that the proposals made by Dr. Weizmann were very similar to those that Wingate had made to General Ironside. Therefore, it is likely that Wingate's memorandum had at least given direction to these proposals.

Under the supervision of Rattner, the *Haganah* organised centres for officer training, improved communications and organised defence within the *kibbutzim* system. It also published professional military literature. According to Wallach, many of Liddell Hart's articles and some of his books were also translated into Hebrew. Weapons procurement was started. The *Haganah* high command organised an intensive *Rechesh* (a clandestine weaponry purchasing operation) mainly with Polish support and established a small armaments industry, the *Ta'as*. Before 1939 the *Haganah* also created the nucleus of a navy and air force and most importantly, it set up a network for gathering intelligence and information, *Shay*. In addition, for the first time the *Haganah* prepared a plan to reorganise its organisation into divisions in case the British Army left Palestine.[132]

The next step was taken in September 1939 when a Supreme General Staff was established in Tel Aviv. Yaakov Dori, ex co-commander of the S.N.S. and also a veteran of the Jewish Legion, was appointed Chief of Staff. Although this staff was still underground, it dealt with tasks much like any other general staff in a small country. It consisted of four departments: a Planning and Organisation Department; a Control Department; a Technical Department that took care of staff functions that were not specifically allocated elsewhere; and a Training and Instruction Department. During the War of Independence these departments were renamed as follows: the Operations, Manpower, Quartermaster and Training branches.[133]

When the Arab riots faded out and the British withdrew their support of the Jewish Settlement Police and disbanded the S.N.S., there was no more acute need for actual operations excluding guard and patrol missions. This left the *Haganah* a trained reserve, which was used to enlarge the military part of the *Haganah*. In this context, youngsters from the age of 18 to 25 were trained as part-time soldiers in the HISH companies, which were organised for immediate mobilisation within a battalion framework. In addition, a youth organisation, GADNA (*Gedudei Noar*, youth battalions), was established in 1940 to strengthen the security consciousness of the youth and to give them basic military training; among other things physical training, map-reading and shooting were in the school curriculum. During WW II these GADNA units served as runners and in other auxiliary functions, but they also clandestinely

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[132] Perlmutter (1969), p. 32, Sykes, p. 172 and Wallach, J. L: Obituary of Sir Basil Liddell Hart, p. 5 – 6.

According to Sykes, the *Haganah* was commanded on a committee basis and there was no over-all commander at that time. However, although defence preparations were planned on a committee basis, the final decision was made by the Chief of Staff.

See also Schiff (1974), p. 16 and 131 and Ben-Gurion, David: Rechesh and Ta'as - Arms for the Hagana, Jewish Observer and Middle East Review, September 27, 1963, p. 17 – 18.

Shay was the predecessor of *Modeyin* (Military Intelligence), which was to become one of the three main divisions of Israel's intelligence services. The other two are *Mossad* (the Central Intelligence and Security Agency) and *Shin Bet* (Internal Security Service).

The arms industry was started in the leather factory of Yaakov and Benjamin Lefkovitz. In 1939, the *Haganah* had 6,000 rifles, a million rifle cartridges, 600 submachine guns, 24,000 hand grenades and 12,000 rifle grenades. Production of the first 75 mm mortars was started.

[133] Dupuy (1992), p. 6 and Luttwak & Horowitz, p. 43.

distributed propaganda posters and gathered information on British activities and movements.[134]

Events on the Western Front in the first years of WW II created a new situation in the Middle East. Palestine was threatened by Axis bases in the Western Desert. There were also fears of pro-German coups in neighbouring countries. Observant leaders of the Jewish community suddenly realised that Palestine could become a major campaign battleground, and might even be evacuated by the Allies. If this happened, the Jewish community would face two enemies: the Germans and the Arabs.[135]

As the German-Italian threat came closer in mid-1941, the British made some informal arrangements with the *Haganah*. The National Command authorised the establishment of a full-time military organisation under the command of the *Haganah*, the PALMACH (*Plugot Mahatz*, striking or shock companies). However, it was controlled via its own staff and was therefore not fully subordinated to the *Haganah* supreme command. Yitzhak Sadeh was placed in command of the PALMACH and six companies were quickly built around a core of *Nodedet*, FOSH and S.N.S veterans. PALMACH units were formed and trained with British assistance in sniping, reconnaissance and demolition work. These units also included German and Arab speaking platoons. Gelber tends to see similar aims behind the establishment of the PALMACH as were behind the creation of the British Special Air Service (SAS) in North Africa. Of the eleven active PALMACH companies only two saw real action when the men of these units acted as scouts in the van of the British invasion of Syria and Lebanon in 1941.[136]

As the British-Jewish co-operation ended with Rommel's defeat in North Africa in November 1942, the PALMACH units went underground to preserve their existence as the backbone of the *Haganah*. They continued as a standing, ready force of more than 2,000 trained men that in 1944 were consolidated into four battalions. This number also included officers who were trained in 1941 in a platoon commanders course at Juara. According to van Creveld, this course was the first in a long series of courses that produced a number of the future IDF Chiefs of Staff. In 1944 a naval company (*Palyam*) and an air platoon (*Sherut Aviri*) were also established within the PALMACH organisation. *Palyam*'s primary mission was to provide inshore assistance for clandestine immigrant boats. The air force platoon was a liaison unit before the War of Independence. Once WW II had ended, some 30,000 men and women were in the trained reserve. When the British left Palestine in 1948, the

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[134] Ibid. and Rothenberg, p. 32 and Schiff, Zeev: A History of the Israeli Army. 1874 to Present, Macmillan Publishing Company, New York 1985, p. 102 – 103.

By the end of WW II, GADNA had thousands of youth and some units also took part in combat.

[135] Allon (1970), p. 15 – 16.

[136] Rothenberg, p. 28, van Creveld (1998), p. 47, Schiff (1974), p. 24 and interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber.

See also Bagnall, p. 27, Dupuy (1992), p. 7 and Sykes, p. 222 – 223.
Moshe Dayan was one of the scouts of a PALMACH unit that operated in Syria and Lebanon.

Haganah already had, although spread among different cells, the organisational framework of an independent army with a general staff and all three services. It had over 2,000 active personnel in its ranks and approximately 45,000 trained reserves ready for mobilisation.[137]

The PALMACH companies were the first regular units of the *Haganah* where the rank and file was formed from ordinary citizens, from the boys and girls of the founders of *kibbutzim* and *moshavim*. In this way, PALMACH was, according to Luttwak and Horowitz, elitist but egalitarian within itself. It represented socialist values; for example, officer ranks were only functional and attached to tasks and not to individuals. In the egalitarian social atmosphere that prevailed in PALMACH, open debate was accepted as natural, obviously a tradition of the Jewish community since the Biblical era. On the other hand, the HISH forces controlled directly by the *Haganah* General Staff were more traditional from a military point of view. This diversity contained a seed of the disputes that were to be revealed during and after Israel's War of Independence in 1948 – 1949. PALMACH platoons were stationed at *kibbutzim* throughout the country, and were linked with adjoining platoons to form companies, which in turn were grouped together to form battalions. After the withdrawal of British financial assistance after 1942, these units were forced to divide their time between their military activities and earning their keep by working on the land.[138]

Tactically, the PALMACH units continued, under Sadeh's command, the principles applied by the S.N.S. and Sadeh's units. PALMACH was a force of guerrilla infantry. Because of the inferiority of its numbers in comparison to the enemy and the semi-legal character of its troops, the purpose of training after the end of the British assistance was to teach the ability to operate in small, mobile, independent units. Weaknesses were compensated for by very high standards for individual skills, group morale and unusual tactics; therefore emphasis was put on inventive tactics and leadership. PALMACH emphasised group cohesion and combat leadership at all levels. In its training courses even squad leaders were trained to act independently. Great emphasis was also laid on night training. These needs were taken into account in training programs.

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[137] Bagnall, p. 27, Dupuy (1992), p. 7 – 8, van Creveld (1998), p. 49 and 51 and The Story of the Defence Forces. Focus on the Guardians of Israel. Israel Today and The Jewish Times, June 16, 1967, LH 15/5/315, part 2, p. 5.

See also Williams (1989), p. 250.
According to Williams, the *Palyam* was established in late 1943 soon after the British accepted Palestinian Jews in the Royal Navy.

[138] Bagnall, p. 27.

According to Brigadier Bagnall, the great majority of Jews fulfilled their duties to Britain; only a minority regarded their responsibilities towards the establishment of a Jewish National Home as being of a higher order.
The para-military system of farm work and military training was adopted by the IDF after the War of Independence, and was known as NAHAL.

Command courses concentrated on reinforcing a candidate's original leadership skills. In addition, half of the training was carried out at night.[139]

4.6. The role of the Jewish Brigade Group and veterans of WW II in the birth of the operational framework

On 9 September 1944, the British War Office in London finally made a decision to establish an independent Jewish formation in the British Army, HAYIL (*Hativa Yehudit Lohemet*, the Jewish Brigade Group). This group was all that ever came of the long and devoted efforts of the Jewish and Gentile Zionists to raise a Jewish army to fight Nazi Germany. Up until the end of WW II approximately 1,500 men volunteered for this brigade, mostly from Palestine. This was, however, only a small part of the 28,000 men and 4,000 women who had volunteered for various units of the British Army earlier in the war. Some 450 of them attained officer's rank. According to Ne'eman, this all had a strong effect on the shaping of the future Israeli Army. Having numerous Jews in the armed forces of other states – mainly in the British Army – proved to be an advantage to the *Yishuv* because this allowed the development of original methods and new ideas. Yigal Allon and David Ben-Gurion also mention this detail. According to them, individuals in the Jewish Brigade learned a wide range of military skills and know-how; techniques of battle-control, the command patterns of companies and battalions, the use of a variety of specialised arms, the use and care of battle equipment and co-operation with other arms. But above all they learned how a military unit is built up; i.e., how each part is established and systematically added to the whole. Thus, Ben-Gurion viewed the Jewish Brigade as one of the most important factors in the impending struggle for the establishment of the Jewish state. This was the opinion of Yuval Ne'eman a well. According to him, the *Haganah* cadres got their formal training as well as their first acquaintance with administration and logistics in the British Army. When estimating the numbers of trained Jews in the British Army in the footnote of this paragraph, it seems to be justifiable to say that Jews acquired military experience in all branches of the army, in the

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[139] Bagnall, p. 28, and Luttwak & Horowitz, p. 402 and Allon (1970), p. 19 – 20.
Luttwak and Horowitz and Bagnall examine the quality of the PALMACH field-training program in their research works. According to Bagnall, of 332 training periods, 105 were conducted at night. As the syllabus included certain subjects that could only be carried out during the day, such as camouflage, estimating distances and taking cover from observation, the proportion of night to day training was in reality about 50 to 50. Correspondingly, Luttwak and Horowitz analyse the training schedule of the squad commanders' course; of 493 hours of training, 81 hours were dedicated to independent command and only 25 to command in the framework of a platoon. In addition, 120 hours were allocated to indoctrination and cultural activities.
See also Rothenberg, p. 30.
The course commander was Haim Bar Lev, the future IDF Chief of Staff in the late 1960s and early 1970s.

commandos, in the air force and in the navy, in addition to training, administration and logistics in the British Army.[140]

Despite the above, the *Haganah*'s high command also obtained experience in planning and executing the complex undertakings entailed by illegal immigration and settlement as well as co-operation with the whole community. However, according to Bagnall their actual military experience at this time was still very limited, and little experience had been obtained above the company level. This supposition might be quite right, when it comes to the question of staff work and planning. To support this opinion, Bagnall cites General Dan Evan. General Evan was a British-educated officer, who commanded the Eastern Front in Israel's War of Independence and thus had the experience and ability to analyse the tactical and most of all the operational skills of the *Haganah* and PALMACH. Evan regards the *Haganah* and PALMACH as not being sufficiently trained, nor suitably organised to take the field without the influx of British-trained officers and N.C.O.s who played a vital part in the establishment of the Israeli Army. According to him, the British-trained personnel provided almost all the expertise in such fields as armour, artillery, heavy support weapons, signals, engineers, tactics, modern training methods, staff duties and supply. With this statement, Evan supports Ne'eman's views. However, Evan estimated that the training of Jewish underground units up to the platoon level was good to excellent and therefore he goes on to say that the *Haganah* provided an indispensable and popular base, upon which the Army could be built.[141]

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[140] Ben-Gurion, David: The Birth of the Jewish Brigade, Jewish Observer and Middle East Review, January 27, 1964, LH 15/5/311, p. 18 – 21, Bond, p. 241, van Creveld (1998), p. 49, Allon (1970), p. 230, Ne'eman, Yuval: This War of Our Resolution and how to Safeguard its Achievements, Liddell Hart's correspondence with Colonel Yuval Neeman, 18th August, 1967, LH 2/18, p. 3 and Bar-Zohar, p. 121.

The commander of the Jewish Brigade was a British Jew, Brigadier Benjamin. All officers were also Jews.

Ben-Gurion also estimates the number of Palestinian Jews who were trained in the British Army. Of the total of over 30,000 men and women in the British Army during WW II, 25,734 were from Palestine. 21,851 of them were men and 3,933 were women. They were divided into the various branches as follows: 4,665 in the infantry, 4,359 in transport, 3,214 in auxiliary units, 3,123 in engineer troops, 2,021 in the Royal Air Force, 1,146 in ordnance, 1,009 in the Royal Navy, 659 in the artillery and 3,344 in the medical and signal corps. In addition there were those semi-legal troops of the *Haganah* in Palestine. According to van Creveld, 10% of the strength trained in the British Army were women.

See also Schiff (1974) and Luttwak & Horowitz (1975), p. 24. p. 22.

According to Luttwak and Horowitz, some 27,000 of the *Yishuv*'s men and women served in British and Allied forces as volunteers. This number obviously does not include the Jewish Brigade. This brigade saw very little active service; nevertheless, its officers and N.C.O.s were trained and familiar with the technical and support tasks required for sustained warfare.

[141] Bagnall, p. 28 – 29.

Before his arrival in Palestine, General Dan Evan served as a company commander in the British Army and later commanded a brigade. Bagnall's citation is from Evan's book *Memoirs*.

See also van Creveld (1998), p. 66.

According to van Creveld, there was probably not one person who had commanded as much as a battalion in action in the entire *Yishuv*, which the British saw as "amateurishness" in the organisation.

Yigal Allon, an ex-member of the PALMACH, provides a slightly different view of the operational skills of the *Haganah* and PALMACH. Although he tends to idealise and over-emphasise the importance of PALMACH by saying that the PALMACH commanders retained their individual quality even when they worked within a larger framework, he is also right. The PALMACH commanders were able to combine the best features of their own tactical innovations with the traditional military skills absorbed mainly from the British. This is revealed in at least two ways. The initial fact was that the Jews would always be outnumbered. This inferiority in numbers had to be compensated for and therefore the tactics taught by Sadeh and Wingate; i.e., initiative in small unit operations by relying on surprise, mobility, and ingenuity in decision-making rather than on frontal assaults and supporting fire – was encouraged. Second, the Jews thought that it was easier and safer to turn guerrilla units into a regular force than the other way around, and besides, this made the maintenance of PALMACH's tactical flexibility, which had already turned out to be effective, possible. Therefore, organisational development went from the bottom up; tactical and individual skills were transferred to the organisational and tactical principles of larger units. Much of the PALMACH tradition of informality, equality and innovation was also later bequeathed to the organisations and leadership principles of the IDF, although the British-trained officers held a central position in the development of the IDF after the War of Independence at first.[142]

4.7. Towards the War of Independence

The years 1944 through 1947 brought a struggle with the Mandate authorities, but they also included the large-scale military construction and organisation of the *Haganah*. Tension increased at the end of March 1944 when the British stopped all Jewish immigration to Palestine because of concerns for stability in the Middle East. ETZEL renounced its truce with the British and began making terrorist strikes; kidnappings, assassinations and a continual series of attacks against British officials, soldiers and government installations. This wave of violence, which almost caused a civil war between the *Haganah* and these separate groups, had already began in 1941 when a group of extremists had broken away from ETZEL and formed their own extremist group LEHI (*Lohamei Herut Israel*, the Fighters for the Freedom of Israel). However, in 1945 the *Haganah* also joined in the actions against the British, though mainly with bloodless operations.[143]

Yigal Allon describes the problems that the *Haganah* faced in its action against the British in his book *The Making of Israel's Army*. The main question was over what strategy was to be chosen. A full-scale, openly-declared war was out of the question because of the superiority and mobility of British

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[142] Allon (1970), p. 19 – 20, Williams (1989), p. 300, Rothenberg, p. 30 and Weller, J: Sir Basil Liddell Hart's Disciples in Israel, Military Review, January 1974, p. 13 – 20.

[143] Rothenberg, p. 33 – 34 and van Creveld (1998), p. 55 – 56.
LEHI was also known as the *Stern Gang* in accordance with the name of its founder, the scholar and poet Avraham Stern. ETZEL was lead by Menahem Begin at the time.

troops. The strategy of classical guerrilla warfare was also ruled out because most of the hills and mountains were populated by Arabs and therefore were not suitable for the secure base areas required in this kind of warfare. In the end, the Jews adopted the middle way between extreme terrorist tactics and limited struggle. This strategy came to be known as "constructive warfare"; it included illegal immigration, new settlements in prohibited areas, mass demonstrations and attacks mainly against military objectives or against targets that had military value. In addition, an important aim was to avoid casualties or at least reduce them to a minimum. The political objective was to cause problems for all the parties concerned and force them to seek a positive solution to the question of the Jews. However, despite the aim of avoiding innocent casualties, excesses were not rare, although a semi-official division between the *Haganah*, ETZEL and LEHI was established. ETZEL, which was not securely in the hands of the *Haganah* supreme command, set about killing British security personnel by mounting ambushes and planting bombs and LEHI for its part even assassinated selected individuals, including Jewish "traitors".[144]

Up until mid-summer 1946, the *Haganah*, ETZEL and LEHI operated together. However, the explosion at the King David Hotel, headquarters of several civil and military organisations, in Jerusalem on 22 July was the turning point in the unity of the Jewish organisations. After that, the *Haganah* began to avoid armed clashes with the British, whereas ETZEL and LEHI decided to continue to the bitter end. Thus, violence in Palestine continued and it was only a question of time when the British would leave.[145]

During the period after WW II and before the British withdrawal, most *Haganah* operations were quick raids because the Jewish underground fighters had to disappear before they lost the cover of darkness. The British counter-measures had the character of police actions rather than that of full-scale military operations. However, the *Haganah* got experience in military operations, and also succeeded in rooting a consciousness of national

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[144] Allon (1970), p. 23 – 25 and van Creveld (1998), p. 56.

See also Sykes, p. 203 – 204.

Already in May 1939, Wingate had warned the leaders of the *Haganah* not to jeopardise the goodwill of hundreds of thousands of English citizens, who felt like he did about Zionism. This is revealed in the following words by Wingate: "I warn you. If you ever resort to violence, if you kill one British soldier or one British policeman, you may so shock people in England."

[145] Rothenberg, p. 35 – 36 and van Creveld (1998), p. 60.

Rothenberg also pays attention to the results of various Jewish fighting organisations. The conventional version of history has been dominated by the *Haganah*, the *Mapai* party, and the Jewish Agency, and no value has been assigned to the extremist groups ETZEL and LEHI. According to him, however, all of these groups complemented each other, although, as van Creveld puts it, it is difficult to pinpoint which organisation was most responsible for the British departure from Palestine.

See also Bell, J. Bowyer: Terror out of Zion. The Violent and deadly Shock Troops of Israeli Independence, 1929 – 1949, St. Martin's Press, New York 1977, p. x.

Bell concludes in the foreword of his book that "IRGUN (= ETZEL) and LEHI were considerably more important than common wisdom would allow."

responsibility in security matters in their new citizens.[146] Nevertheless, this military experience was mainly tactical, but the ability to employ co-ordinated small units in action over wide areas was to be a great advantage in the War of Independence when they were compared to their tactically inferior adversaries.

[146] Allon (1970), p. 27 – 28.

5. THE WAR OF INDEPENDENCE

On the eve of the War of Independence, the *Haganah* had about 49,000 men and women in its active or militia forces.[147] 4,000 of them were already mobilised in the *Haganah* (in HISH and PALMACH), while another 1,000 of the PALMACH were ready for immediate mobilisation. A force of 12,000 service personnel stretching from those on active duty to those who were training (including the already existing forces) was to be formed by early 1948. Behind these troops were a total of 37,000 reservists, mainly from the HIM (*Hel Mishmar*, home guard or guard corps), for immediate local security functions. The HIM was established together with the HISH forces in 1941. At that time the older men with lesser training and weapons had formed the regional forces. In December 1947, most of the men and women in the *Haganah* had, according to Luttwak and Horowitz, received a total of fifty days of military training or less. This means that the basic military skills – like shooting, small arms weapon training and small unit tactics within the framework of platoons and companies – had at least been adopted. In addition, there were more than 2,000 volunteers (*Anshei Ha'Ma' cha'l*, Foreign Volunteers), WW II veterans from the United States, France, Great Britain, Canada and South Africa. These volunteers, mostly Jews, helped the *Haganah* in training and mobilisation: some were pilots, some assumed command tasks as brigade commanders, and some performed staff officer duties.[148]

Interpretations of the quality of Jewish forces vary in different sources, but many of them consider the Jews to be inadequately trained. This is perhaps not the whole truth, especially when comparing the relative strength of the Jews to the enemy forces. According to Trevor Dupuy, there were at most 40,000 Arab troops committed to the liberation of Palestine from the Jews, and they certainly were much more poorly trained than the Jewish forces. The colonial rulers; the French in Syria and Lebanon, and the British, had not thought it necessary to train national troops for their ranks, and in 1947 these armies were brand-new, without military experience. Only the British-educated Arab Legion, consisting of about 10,000 men, can be evaluated as being qualitatively equal to the Jews.[149]

The real disadvantage of the Jews was their armament. In the case of small arms, the situation was not so grave. Trevor Dupuy estimates that the Jews were able to arm a force of about 30,000 at the beginning of the War of

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[147] In this study the Middle East War 1948 – 1949 is called "Israel's War of Independence". Although this might be a somewhat limited point of view, this term is accepted in this work because it is often used in the sources. As a result of this war, Israel became independent. However, up until today this event has not been recognised by all Arab states, especially with regards to the question of Israel's territorial borders.

[148] Dupuy (1992), p. 8 and 15 – 19 and Luttwak & Horowitz, p. 1 and 17.
See also Katz (1996), p. 37 and Rothenberg, p. 57.
According to Rothenberg, the number of foreign volunteers was more than 2,000 but less than 5,000 men, the official number is too low. To see more about the volunteers listed in the IDF during the War of Independence, see for example Bercuson, David J: The Secret Army, Stein and Day Publishers, New York 1984.

[149] Dupuy (1992), p. 8 and 15 – 19.

Independence, of whom between 14,000 and 20,000 had modern small arms and another 10,000 were equipped with a wide variety of obsolete military weapons or hunting guns. More serious was the lack of heavy mortars, field artillery, armour and combat aircraft. The Jews had only 800 light machine guns, 200 machine guns and a total of 800 light 2 and 3 inch mortars. On the other hand, the Arab forces possessed armoured cars, artillery and aeroplanes, among them several modern combat fighter-bombers.[150]

Excluding the armament, the total manpower ratio was somewhere around 1:1. During the war the Jews were, however, able to double the strength of their manpower and also increase the amount of their armament, including artillery and aircraft. The Jews had some other advantages as well. They were in a defensive posture, knew the terrain and were fighting on interior lines. The Arabs also did not seriously co-operate with each other, which gave the Jews the opportunity to concentrate their forces according to the threat. In addition, the Jews had an organisation ready for battle, they had a fighting doctrine emphasising co-ordinated small unit action that had already been tested, they were better trained, they had planning and combat experience and they were mentally ready to fight. Even so, Israelis have been fond of the David and Goliath comparison up until today, which – excluding the initial ratio of armament – seems to have been exaggerated. Thus, Trevor Dupuy's statement "it was really a Jewish Goliath against Arab David" might be more apt.[151] The strengths, orders of battle and losses of the Middle East War 1948 – 1949 can be seen in Appendix 4.

It is difficult to point out the precise day the War of Independence broke out. After the British announcement of their withdrawal from Palestine in late 1947, the violence between Jews and Arabs resurfaced in November and continued up until spring 1949. Therefore, the Israeli War of Independence can be divided in different ways. In this thesis it is divided functionally as follows:

- The War of the Roads, a half-year period preceding 15 May 1948. During this period the last British forces were evacuated from Palestine. In this stage of the war, the Jews mainly engaged in defensive actions.
- The second stage, the first four weeks of the War of Independence from 15 May to 10 June. On 15 May, the neighbouring countries launched – after

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[150] Ibid.

[151] Ibid, p. 19.

See also Howard, Michael and Hunter, Robert: Israel and the Arab World, p. 2 and Katz, Samuel M: Fire & Steel. Israel's 7th Armored Brigade. Four Decades of Victory and Courage - the Story of the Most Awesome Tank Force in the World Today, Simon & Schuster, 30 Avenue of the Americas, New York, NY 10020, 1996, p. 25.
Howard and Hunter also support the myth of the Israeli David and the Arab Goliath by saying that the *Haganah,* with its spearhead of PALMACH shocktroops, was ready to fight the Palestine Arabs in 1948, though initially she was not prepared either in armament or in organisation to deal with the regular forces of Syria, Iraq, Jordan and Egypt.
Samuel Katz compares the total population of each side and states that the Jews in Palestine were outnumbered 100 to 1. However, it is misleading to compare the total population of belligerents in a short war. The bulk of the people were neither trained nor armed for war. In this case efficiency is the important factor, how the Jews were able to mobilise such a large proportion of their manpower for war.

Israel's declaration of independence on the previous day – a full-scale offensive against the newly-established state. From the Jewish point of view, this stage saw both defensive action and the containment of Israeli forces.

- The third phase begins on 8 July, one day before the cessation of the first truce, and is known as the "*Ten Days' Offensive*". This phase consisted of Israeli tactical offensives on all three fronts, although the Egyptians initiated the battles.
- The final phase continued on 15 October after the second truce with Israeli offensives in the Galilee and on the southern front up until 10 March 1949. This fourth stage consisted of Israeli operational offensives.[152]

Examples of Israeli operations during the War of Independence can be seen in Appendix 5.

5.1. War strategies and organisational preparations

According to Zvi Lanir, an Israeli Colonel and scholar, the War of Independence was characterised by a close co-ordination and, at times, full compatibility between political goals and military objectives. Both sets of goals were formulated in terms of seizing and holding territory. It seems, however, that a possible war had been thought through only at the tactical level, and the operational level, which combines national political goals and tactical objectives on the battlefield, was vague or unclear up to the third stage of the war. Therefore there is good reason to expect that, although the *Haganah* had operated in a political context, no nation-wide military doctrine existed. In this war the *Haganah* and its successor, the IDF, which was officially established at the end of May, had not yet adopted the goal of achieving decisive victory in battle. In any case, the conquest of territory became the basic political aim of the war, but at first this goal was to be attained through a series of battles at tactical level. According to Shaul, only during the first truce when the force numbers began to grow were the first operational plans created. After that some concepts of destroying the enemy, in addition to the aim of seizing territory, existed in the final phase of the war.[153]

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[152] The War of Independence is divided into different phases depending on the aim of the researcher. Yigal Allon and Zvi Lanir, who both have studied both the political and military action of the Jews, do not separate the War of the Roads from the full-scale war. In addition, Allon divides the War of the Roads into two different sub-phases; first the era when the British troops still were present in Palestine and second the phase when the rest of the British troops were evacuated and the action of the Arabs intensified. See Allon (1970), p. 30 – 43 and Lanir, Zvi (ed.): Israeli Security Planning in the 1980s. Its Politics and Economics, Praeger Publishers, New York 1984, p. 17 – 19.

[153] Lanir, p. 17 – 18 and interview of Colonel, Doctor Shai Shaul.

Neither the Israeli war aims nor the definitions of the levels of warfare were clear. This is revealed in Ben-Gurion's words, as quoted by Lanir: The War of Independence was "less than a total victory . . . but an improvement in our military situation and a great political victory." The most obscure is the latter statement. Obviously it meant the independence of Israel, the situation in Palestine was not solved, as is well known.
See also Luttwak & Horowitz, p. 1 and van Creveld (1998), p. 81.

In spring 1947 all the Jewish war plans were based on the assumption that the worst danger facing the Jews after the British withdrawal would be an uprising of the local Arabs. David Ben-Gurion, who was head of the Zionist Executive at the time, believed otherwise; he saw the possibility of a multi-front war against neighbouring Arab states as being the most probable. However, the *Haganah* was only prepared for limited conflicts, which is revealed in the plans that were presented to Ben-Gurion in May 1947. This plan consisted of two type of forces: A defence force of 15,000 men in static garrisons, nine battalions of 700 men each for mobile regional defence, an offensive force of fifteen small brigades of 2,000 men each and a strike force of six battalions with 4,500 men. The absence of heavy armament was striking. In addition, the *Haganah* was divided internally into contending groups that were almost hostile to each other. These factions were the "*Haganah* party" representing the different existing and past *Haganah* organisations, and the "army party" which consisted of British-trained soldiers. The "army party" under the leadership of Haim Laskov also secretly presented a plan to Ben-Gurion. That concept consisted of twelve large brigades, an air force, armour and artillery. The discrepancy between the two plans led Ben-Gurion to trust the Jewish Brigade veterans more.[154]

When war seemed inevitable at the end of 1947, the *Haganah* started its preparations. Up until April 1948 the *Haganah* was commanded on a committee basis, but thereafter the Minister of Defence for the Jewish Agency dealt directly with the Chief of Staff. The Jewish Agency can be seen as the predecessor of the Israeli government. The General Staff was organised under the guidance of former members of the British armed forces. According to van Creveld, the *Haganah* adopted the Anglo-German model, which had one division each for operations, intelligence, personnel and supply. By doing so, the *Haganah* put much greater emphasis on operations as opposed to the other already existing divisions, personnel and supply. The basic idea was to have the head of the General Staff Division unite operations, intelligence, training and doctrine and act as a *primus inter pares* under the Chief of Staff.[155]

Four regional headquarters (*pikudims*), Southern, Central, Eastern and Northern, were set up under the General Staff. At the very beginning the territorial commands were established to be responsible for territorial

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According to Luttwak & Horowitz, the Israeli Defence Forces were officially established on 26 May 1948. According to van Creveld, they were established two days later on 28 May. The reason for this deviation can not be found in the sources; however, in this context the difference is not significant.

[154] Bar-Zohar, p. 143 – 145.

According to the author, Ben-Gurion was very well aware of the use of military force. He spent a lot of time reading the works of great military theorists, military books and *Haganah* publications.

Also interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber.

According to Gelber, the British-trained Jews also represented the idea of connecting firepower and movement. In PALMACH the emphasis was more on movement – and in an unconventional way. This shows that PALMACH was, despite its rather large size, more a guerrilla force than a conventional army.

[155] Van Creveld (1998), p. 65.

operational issues. All of these commands were expected to be capable of independent fighting, which was an answer to the threat that one day Israel might have to fight some or all of its neighbours simultaneously. In the first lull of the War of Independence in June 1948, these headquarters were reconstituted as commands under the General Staff. In spring 1948 the small naval and air force components were also separated from PALMACH and their command echelons were incorporated into the General Staff as well. According to the Israeli officer and military analyst Netanel Lorch, the unified General Staff was created for three reasons: to co-ordinate every type of military operation closely with ground forces, to economise manpower and avoid duplication, and to streamline procurement and unify training methods to facilitate inter-service co-operation.[156]

According to Shai, the IDF General Staff combined services, general staff duties, territorial commands and the channel of command to different arms. In Israel there, however, wasn't any General Staff Corps at different levels of the command echelon. The command system was constructed to be commander-centred, where commanders concentrated on the aim and how to reach it and the staff on understanding the aim in the spirit of the commander's will, and on supporting this objective. In this concept, the aim unified the command process at all levels of warfare. Therefore Gelber's statement that the IDF General Staff became a joint staff of services already during its early years seems to be justified despite the fact that the ground forces command didn't exist at that time, but the General Staff also served as the headquarters of the ground forces. This system was to remain up to 1980s when a separate command for ground forces was established.[157]

The HISH battalions were gradually called to active duty and in February 1948 they were grouped into six brigades. During the war, the HISH troops were first used locally because they were largely immobile in operational terms in the early phases of the war. Later in the war, improvements in transportation equipment made it possible to also use HISH troops on a nation-wide scale. Three PALMACH brigades, whose politics contradicted the *Haganah*'s leadership, were also integrated into the *Haganah*, although at this stage PALMACH still retained its own country-wide headquarters. PALMACH units spearheaded major operations on difficult fronts, but in later operations these brigades were also used in conjunction with other forces. In October, PALMACH's headquarters were folded into the IDF as well. The Home Guard (HIM) mainly acted as a means of passive defence in cites, but it was also used for reinforcements in rural areas.[158]

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[156] Rothenberg, p. 45, Luttwak & Horowitz, p. 97 and Lorch, Netanel: Shield of Zion. The Israel Defense Forces, Howell Press Inc., Charlottesville, VA, 1991, p. 56 – 57 and 59.

At the end of the 1950s the Central and Eastern Commands were combined.

[157] Interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber and discussions with Doctor, Colonel (ret.), Hanan Shai.

According to Shai, the IDF General Staff was constructed on the Prussian model. Von Moltke the Elder also emphasised the operational factor on his General Staff.

[158] Luttwak & Horowitz, p. 25, Bagnall, p. 30 – 31 and van Creveld, p. 89 – 90.

See also Rothenberg, p. 45.

The strategy of the *Haganah* during the War of the Roads was as follows:

1. To defend every settlement as a base within Arab dominated territories and to identify them as ultimate objectives when an offensive could be launched.
2. To avoid direct clashes with the British.
3. To establish territorial continuity in predominantly Jewish zones and, as far as possible, between zones.[159]

During the war these objectives were redefined to better cover the war aims of an independent state. However, despite this process they remained mainly military without an overall political context.

The Arab strategy is much more difficult to perceive. This was a consequence of the United Nations Participation Plan on 29 November 1947. According to this plan, Palestine was to be divided into two independent Arab and Jewish states. The Arab areas, however, represented different groups of interests. This disagreement – in addition to the fact that the Arab forces were scattered and the strongest one, Iraq, rather far away – also made concentrated military efforts difficult. The only shared objective was to prevent the birth of an independent Jewish state.[160]

5.2. From tactical defence to operational offensive

The period of the War of the Roads could be described as having been mainly skirmishes along the road net between isolated Jewish settlements, although there was also sniping, bombing and occasional clashes in the cities. At the beginning of this period, the *Haganah* adopted a defensive strategy because of a fear of innocent victims, and the measures were also mainly passive: consolidation of communications between Jewish areas and occupation of positions blocking the most likely invasion routes. However politically sound this policy was, it was inadequate in preventing the ever increasing clashes in early spring 1948.[161]

In April 1948, the Jews finally went over to the offensive and launched the first large brigade-scale series of operations called "Plan *D*". The aim of this plan was to protect the communication routes by occupying territory. The most important aim was to break the blockade of Jerusalem by seizing natural strong-points along the Tel Aviv – Jerusalem road. Ambushes not larger than a company were also used. With the co-operation of the HISH and PALMACH

The *Haganah* brigades were *Alexandroni*, *Carmeli*, *Etzioni*, *Givati*, *Golani* and *Kiryati*. The PALMACH brigades were *Yiftach*, *Harel* and *Hagenev*.

[159] Allon (1970), p. 31 – 32.

[160] Dupuy (1992), p. xxiii.

[161] Rothenberg, p. 47 – 48.

battalions, the goals of "Plan *D*", secured communications between the Galilee and Jerusalem, were largely, although temporarily, achieved.[162]

When the real war broke out in mid-May, the Israelis tried both to block their enemies' thrusts to the coastal plain settlements and to the Jewish parts of Jerusalem. On the northern front, the Israelis already engaged in small-scale offensives against the Lebanese, Syrian and Iraqi troops after a short containment period. In defensive positions, the Jews were only able to stop the Egyptians some ten kilometres south of Tel Aviv with great effort as was the case with the Arab Legion in Jerusalem in the outskirts of the Jewish districts. Pre-war preparation, fortifications in the settlements and the principles of active defence proved to be important. They were strong enough to tie up the enemies until the first truce came into effect. In the Galilee and on the northern part of the central front, where there was more room for manoeuvre, the Israelis already applied more mobile tactics. This was at least partly successful. The approach consisted of rapid indirect approach marches and offensives against enemy communications lines, of ambushes against columns and of night attacks. However, this approach was probably not due to an understanding of Liddell Hart's "Indirect Approach", it was merely an application of the guerrilla tactics that had already been used earlier in different types of guerrilla and counter-guerrilla operations in the 1930s and 1940s. One reason for mobile tactics was also the obvious lack of heavy armament that was a prerequisite for direct assaults on fortified positions. The lack of training in traditional conventional warfare might also have been an explanation. Commanders who were aware of the demands of co-ordination between different branches were rare. In addition, a sensitivity to manpower losses was behind tactical solutions. Nevertheless, all these reasons were typical motives for the compensation of inferiority with mobility. According to Yuval Ne'eman, everybody in the army during the War of Independence already knew that results should be achieved with minimum losses when it proved possible – either by indirect approach or by avoiding enemy strengths.[163]

Yigal Allon gives this mixed principle of defence and offence the name active defence. The idea of being active was not new. The Jews knew of it as well. Both Sadeh and Wingate had insisted on it. Liddell Hart also pondered it. In his early writings on WW I, Liddell Hart wrote that "maneuver would be restored to the entire front by relying on the tactical manoeuvring of many small units. The key to victory on the battlefield could therefore be found by working out principles of tactics upwards from the elementary, instead of downwards from the complexities of large operations"; i.e., numerous tactical successes with small mobile units would produce a strategic success if the parts were well led. Although the Israelis acted like the description above, particularly in the early phases of the war, it would be artificial to only connect this type of indirect approach to Liddell Hart. According to Brian Bond, it seems more likely to have its origins in Wingate, though the link between Liddell Hart

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[162] Ibid, p. 47 – 49 and van Creveld (1998), p. 74 – 75.

"Plan *D*" was also known as "Plan *Daleth*". The breaking of the blockade of Jerusalem was a part of "Plan *D*" known as "*Nachshon*".

[163] Luttwak & Horowitz, p. 64, Dupuy (1992), p. 46 – 47, 49 – 51, 54 and 57 – 59 and Ne'eman, Yuval: This War of Our Resolution and how to Safeguard its Achievements, p. 13.

and Wingate might have existed, as already discussed. Nevertheless, in future years the Israelis developed tactical and operational principles for their troops as well as their command system that were flexible enough to enable at least tactical independence, which should be commanded only if necessary.[164]

During the first truce in June – July 1948, the *Haganah* was formally declared to be Israel's official army. The IDF used this lull effectively. Prime Minister Ben-Gurion held a series of meetings with his commanders. In these discussions the lessons learned were collected and strategy for the next stage was laid down. Territorial commands were put in charge of operations and formations were rebuild and trained. There were twelve of them, as Laskov had suggested, by the end of the first cease-fire, including one poorly equipped armoured brigade. The IRGUN and LEHI were disbanded and their men dispersed to other units. In addition a paramilitary unit called NAHAL (*Noar Halutzi Lohemet*, pioneer fighting youth) was created and trained to be the last reserve that could be sent to the front lines. According to van Creveld, the IDF was already a cohesive, disciplined force capable of co-ordinating operations on a countrywide scale in July 1948.[165] One can agree with this evaluation, with the exception that co-ordination between different arms was not very good by today's terms, although the Israelis were able to control their forces nationally. The four-week truce was simply too short a time to teach or learn operational principles on a brigade scale.

After the first cease-fire in mid-July 1948, the Israelis extended their basic war objectives. Because of the sparse lines of the Jewish-held territory, the Israelis put their main effort into the destruction of the enemy or at least into making him withdraw from the entire territory of Mandate Palestine. Operationally this "*Ten Days' Offensive*", which was launched simultaneously on all three fronts, can therefore be described as a containment operation, including neither distant geographical locations nor the destruction of the enemy. However, the Israeli ability to launch simultaneous frontal operations at least indicates a favourable force ratio, and an improvement in armament.

In the second phase of the war, from the purely military point of view, the Israelis applied quite different tactics on different fronts. The most successful was the Golani Brigade's "Operation *Dekel*" in the Galilee. During this

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[164] Allon (1970), p. 34, Bond, p. 46 and 252, Luttwak & Horowitz, p. 64 and Liddell Hart: The Future of Infantry, p. 27 – 28.

This definition of active defence should not be confused with the corresponding term in the late 1970s.

See also Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 13.

The text "Liddell Hart is greatly admired and studied in Israel" has been added to Ne'eman's paper. The origin of this text is unclear.

[165] Allon (1970), p. 39, Williams (1989), p. 301 – 302 and Luttwak & Horowitz, p. 36 – 38.

Luttwak and Horowitz list three new brigades (7th , 8th and *Oded*) in this period.

NAHAL members were 17-year-old *kibbutz* youngsters born in 1931 and, according to Yigal Allon, continued the traditions of PALMACH.

See also Heiman, Leo: Israel's Nahal Corps, Military Review, July 1967, p. 66.

According to Heiman, during the War of Independence Ben-Gurion said that NAHAL's task was to set up 200 fortified agricultural settlements and carry on the PALMACH's glorious traditions.

operation, where the Israelis were able to neutralise the Arab Liberation Army as an effective army, the IDF, feeling itself inferior in firepower, adopted a standard method: Take cover by day while engaging the enemy and using mobile operations at night. However, the main focus was on the Jerusalem Corridor, where the Israelis launched a three-brigade offensive called "Operation *Dani*". The purpose of this operation was to secure the corridor, but it was only partly successful, mainly because of the lack of co-ordination between the infantry and other branches. On this front, the Israelis also used more frontal attacks and firepower than elsewhere. However, in towns and villages, where resistance was relatively weak, the rapid thrusts of jeep-borne infantry units proved to be successful. According to van Creveld, this was particularly the case in Lydda, where Major Moshe Dayan's commando battalion "drove through the main street and reversed direction like an old-fashioned cavalry regiment charging a line of infantry, firing wildly into houses on both sides and finally causing psychological shock and surrender," However, the Israelis suffered heavy losses against the Arab Legion in Latrun. This was not only a result of inexperience in co-ordinating different type of forces, but also a failure of intelligence. In one way this is a little bit amazing because two of the brigades involved were PALMACH brigades which continued the heritage of S.N.S. and FOSH troops that put such a heavy emphasis on reconnaissance. Therefore, the explanation might have been the inexperience in co-ordinating operational issues, as van Creveld states. On the southern front in the Negev, the Israelis were able to open a new corridor to the Negev and to block the east-west communications of the Arabs with two brigades in "Operation *An-Far*". The nascent seeds of deep penetration operations into enemy lines of communication can be seen in this desert operation, although penetrations were only applied in full in the final phase of the war.[166]

In the final phase of the War of Independence, the main Israeli emphasis was on the southern front, first in the Negev and later in the Sinai. The Israelis had several advantages at this stage. First, the road network inside Palestine had been almost secured, which offered the Israelis interior lines, where they had a possibility to move and concentrate forces according to the threat. This was also done during the last phase. Besides, except for the Egyptian forces, the other Arabs did not pose a serious threat anymore. Second the Israelis were now superior in terms of the force ratio. By October 1948, the Israelis had almost 90,000 men and women under arms in 17 brigades, two of them armoured, while the Arabs could, according to van Creveld, muster only 68,000 men. The armament of the Israelis had also greatly improved, including heavy weapons and an air force element.[167]

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[166] Allon (1979), p. 37 – 38, Bar-Zohar, p. 169, Dupuy (1992), p. 75 – 78, 81 – 83 and 86 and van Creveld (1998), p. 84 and 87 – 88.

[167] van Creveld (1998), p. 66, 78 and 82.

By the end of 1948, almost 200,000 people, of whom 164,000 were men, had been registered for service.

See also Dupuy (1992) (1992), p. 123.

According to Dupuy (1992), the Arab strength in October 1948 was some 55,000 men. The reason for this deviation remains unclear.

On 29 September, before the final phase, Ben-Gurion also issued an order to dismantle the PALMACH command. This decision was made both for purely military reasons to raise the professionalism in the army and also to diminish the political influence of the leftist *Mapam* party behind PALMACH. *Mapam* and PALMACH obeyed the government's orders, but remained resentful. After the war, Ben-Gurion's decision led to the resignations of many PALMACH officers. According to Michael Bar-Zohar, this was a severe blow to the quality of the army as well as to its operational effectiveness during the period following the War of Independence.[168]

The final phase of the war consisted of Israeli offensives in the Negev, the Sinai and the Galilee. "Operation *Hiram*" in upper Galilee was planned to destroy the Arab forces and conquer the upper Galilee. The operation was implemented with four brigades, one of them armoured. With large pincer movements co-ordinated by Northern Command, the Israelis were able to trap the Arabs and eliminate them one at a time in a two-week offensive that drew to a close by the end of October. In the south, the Israelis launched two offensives to destroy the Egyptian forces, "Operation *Yoav*" in the latter part of October and "Operation *Horev*" (also known as "*Ayin*") in November – December 1948. Finally, in March, "Operation *Uvda*" was launched to occupy the southern and western Negev. The southern front operations during the final phase of the War of Independence were implemented in desert conditions with three to four brigades, including armoured and mechanised forces, under the command of Southern Command. Although the Israelis also had initial difficulties in co-ordinating this strength here, they tried to avoid these deficiencies with a week's training, during which a few tanks, half-tracks, jeeps, artillery, infantry and combat engineers all rehearsed their appointed roles, according to van Creveld. The operations were also examples of deep penetrations, where natural hazards were preferred to direct assaults; i.e., geographical conditions were fully exploited in thrusts on enemy lines of communications.[169]

5.3. The Air Force and Navy

The role of Israel's Navy (Sea Service) and Air Force (Air Service) in the War of Independence was not a decisive one. There are several reasons for this. First, the *Haganah* had not planned to have an air force, as it has not planned an all-out war. Second, the main threat came by land and therefore the focus of the efforts of the IDF was on land warfare. Third – and this was a consequence of the previous reason – what little resources that were available were first concentrated on the armament of the ground forces, and this left the Navy and Air Force in a secondary role.

In November 1947, most *Palyam* forces were assigned to ground units or to the weapons procurement effort abroad. In the *Haganah*'s and PALMACH's

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[168] Bar-Zohar, p. 176 and 182 – 184.

[169] Dupuy (1992), p. 95 – 96, 101 – 104, 106 – 111 and 113 and van Creveld (1998), p. 96 – 97.

thinking, the sea was important as a route for immigration and supply – but not as a naval theatre of operations. Nevertheless, the Israelis were aware of a possible threat from the sea flank; however, this scenario did not really materialise during the War of Independence. Thus, the purpose of the Sea Service was also to discourage Lebanese participation in the war, and it did in fact compel them to divert forces to cover their vulnerable shores. The Israelis applied the same tactics against the Egyptians, with similar result. The Egyptians did not launch any naval operations against the Israelis, although they tried to supply their troops in the Gaza Strip by sea. The Israelis almost totally blocked these efforts by patrolling the coastline of Palestine. In addition, the Israeli Navy harassed Egyptian land forces in the Sinai by shelling roads and beaches. Thus, the Israeli Navy also forced the Egyptians to disperse their forces on coastal defence, which helped the Israeli land forces for its part.[170]

In the Air Service, the growth in numbers was the biggest of all branches of the IDF.[171] From the beginning of the War of the Roads, the Air Force extended its strength from nine civilian planes to over 200 warplanes of different types by the end of the war. This was a respectable achievement within the length of the war, although it also sowed problems and a lack of concentrated effort that was uneconomical for a small country. By the end of 1948, the Israeli Air Force was in a way a miniature version of a great power's air force, with different planes for different missions. At the beginning of the war there wasn't any doctrine for the air force either. Therefore, the planes were used for bombing and strafing attacks in the enemy's rear areas, but not for co-ordinated attacks with other branches. However, the few planes already caused a shock effect in the ranks of the Arabs in the early stages of the war because the Israelis were expected to have no air force. During the second stage of the war in May – June 1948, the Air Service got its own missions; at first on its own and in the final stages of the war combined with the operations of land forces. The Israelis established air superiority as early as the summer of 1948 and then retained it for the rest of the war. In addition, as a premonition of the future, the Israelis already flew preventive air strikes in the War of Independence against Egyptian airfields and equipment in the Sinai with encouraging results.[172]

5.4. Operational art

It is widely said that Israeli military leaders applied Liddell Hart's "Strategy of Indirect Approach" in their operations during the War of Independence.

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[170] Williams (1989), p. 250 and 252 – 253 and Dupuy (1992), p. 118 – 120.

[171] At the time, the army was composed of separate branches of infantry and artillery, and both the air and naval components were set up in parallel with these. The Air Force and Navy were not independent services, although their autonomy was wider than those of the other branches. See for example Luttwak & Horowitz, p. 42.

[172] Cohen, Eliezer "Cheetah": Israel's Best Defense. The Full Story of the Israeli Air Force, Orion Books, New York 1993, p. 28 – 29, 33, 49 and 54 and Luttwak & Horowitz, p. 66 – 67 and 120.

However, it is not wise to over-emphasise Liddell Hart's influence on the Israeli art of war and "take the simplistic claims of different journalists literally", as Brian Bond mentions.[173] Nevertheless, strong similarities between Liddell Hart's thoughts and the Israeli applications can be seen, and some ties between Liddell Hart and the Israelis also existed before the war.

Yigal Yadin, Chief of the General Staff, IDF during the War of Independence, wrote a strategic analysis of the war's battles after the war.[174] According to Bond, Yadin had already read Liddell Hart's books before the war, and he had also translated chapters of *Strategy: the Indirect Approach* into Hebrew for the benefit of his students and colleagues. Yigal Allon, Yadin's colleague and deputy, for his part, learned of Liddell Hart's ideas before the War of Independence from these translations and from talks with the veteran PALMACH leader Yitzhak Sadeh. Furthermore, among Yadin's students in the early 1940s, when he was in charge of the planning branch of the *Haganah* secret officers' school, were future Chiefs of Staff Zvi Zur and Yitzhak Rabin. Therefore, according to Yadin, Rabin's brilliant analytical mind supported Allon, and was already in the War of Independence – not to speak of the Six Days War – chiefly responsible for the planning of "Operation *Horev*" and other operations on the southern front.[175]

According to Brian Bond, Liddell Hart was a general tactical theorist and, most of all, an exponent of the "Strategy of Indirect Approach" at the strategic level to Yadin. Yadin also acknowledged that he was influenced by Liddell Hart's thinking in his conduct of operations in 1948 – 49. Later on, Arie Hashavia, a correspondent for *Bamachaneh*, wrote in his article on Yigal Yadin on 24 August 1967 that Yadin stressed more than once that his first and foremost mentor was Captain Liddell Hart by saying that "I have read every work of his, and the only original thing I did was – adapting his ideas to our conditions." However, this does not mean that Yadin copied Liddell Hart's ideas in their entirety. As Yadin himself said, he found Liddell Hart's books

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[173] Bond, p. 269.

[174] Yadin was actually Chief of Operations, the second in command of the General Staff. Because of Chief of Staff Yaacov Dori's poor health, Yadin acted as *de facto* Chief of Staff for much of the war. See for example Luttwak & Horowitz, p. 39.

[175] Bond, p. 245 – 246 and 252 – 253.

Yigal Allon met Liddell Hart for the first time in 1949, when he could neither read nor speak English. Therefore, he used the writer Jom Kimche as his interpreter.

Yadin's analysis *For by Wise Councel Thou Shalt Make Thy War* is published in *Bamachaneh* (Camp, Israel Defence Force Weekly) and is also included in Liddell Hart's second revised edition of Strategy, A Meridian Book, New York 1991, p. 386 – 405.

See also Liddell Hart's correspondence with Yigal Yadin, LH 2/23 and Mearsheimer, p. 374.

In 1948, Liddell Hart asked for Yadin's analysis of his application of the "Strategy of Indirect Approach" so that it could be included in his book Strategy. This can be seen in Liddell Hart's correspondence with Yadin on 3 and 28 March 1953. The typescript copy of this article is attached in this file and also in LH 15/304, part 2.

Mearsheimer questions the existence of Yigal Yadin's translations of Liddell Hart's texts. However, Brian Bond based his text on interviews with Yadin, Allon and Rabin. Both Yadin and Allon mentioned the translations. Of Rabin's role in the War of Independence, Yadin thought that Rabin had not read them much then, but knew Liddell Hart indirectly through his (Yadin's) instruction.

useful in triggering his own reflections on warfare, as they were later also useful in the development of the organisation and doctrine of the IDF after the War of Independence.[176]

The strategic level mentioned by Yadin must be seen in this context as equivalent to the operational because Yadin stressed the idea in Bond's interview that the further from the front the enemy lines of communication could be cut, the greater the long-term effects would be. This aim is a typical and concrete objective of the operational level. However, strategic national aims were reached mainly by tactical forces because operations were only loosely co-ordinated by territorial commands and by the General Staff. Therefore, valuable opportunities had also been missed, especially at the early stages of the war, by the poor co-ordination of different brigades in the same sector, and by inexperience with staff duties in operational terms. However, according to Yigal Allon, the Israeli Army intentionally avoided forming divisional echelons during the war because of the prevailing conditions in the Palestinian theatre, and because of the size of their own forces.[177] While the role of the General Staff was still largely unspecified, the territorial commands took charge of operations, which were not closely linked to the national aims. In addition, the commands were largely immobile and therefore had only a limited ability to lead mobile operations. This all meant that while the brigades represented tactical formations by their size, in practise they often implemented operational aims independently. However, during the War of Independence, where the belligerent armies were relatively small and overall war strategies did not exist on either side, this was a sound solution. In the coming years this independence led both to brilliant tactical and operational successes, but also to failures at operational and especially at strategic; i.e., grand strategic, levels.

In his article *For by Wise Councel Thou Shalt Make Thy War* in Israel Defence Force Weekly, the *Bamachaneh* issue, Yigal Yadin also writes that the planning of all the most important operations was prepared with an indirect strategic approach; i.e., by means of cutting off, sealing off and maximum exploitation of cunning to achieve surprise directed at the basic and speedy dislocation of the enemy's deployment.[178] All these principles also represent

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[176] Bond, p. 245, Bagnall, p. 196 – 197, p. 39 – 40 and Hashavia, Arie: Article-clipping about Yigal Yadin in *Bamachaneh*, 24 August 1967, LH 15/5/304, part 2. This article is based on an interview with Yadin.

See also Yigal Yadin's letter to Liddell Hart 23 March 1953, LH 2/23.
In this letter to Liddell Hart Yadin wrote "To Captain Liddell Hart with deepest respect from an admiring pupil."

[177] Allon (1970), p. 40 and Bond, p. 245.

[178] Liddell Hart: Strategy, p. 388 – 389.

In addition to Yadin's there is also an article by Netanel Lorch in Liddell Hart's book. It also deals with the War of Independence.
The most important operations mentioned in this context were "Operation *Ten Plagues*" (*Yoav*) and "Operation *Ayin*" (*Horev*) on the Egyptian front, the consolidation of Eilat and "Operation *Hiram*" in Galilee.
See also Yigal Yadin's letter to Liddell Hart 26 June 1953, LH 2/23.

the principles of manoeuvre warfare. However, it is also wrong here to assume that all the Israeli commanders were aware of the ideas of Liddell Hart, or exploited or applied his thoughts. In many cases it was obviously merely a question of acting instinctively according to the principles of the predecessors of the IDF.

Israeli operational principles during the War of Independence are revealed in another article *Beshviley Machshava Tzvayit* (In the Paths of Military Thinking) written by Yadin. In this article, Yadin makes a brief summary of the major lessons to be learned from the War of Independence. He listed four major principles of warfare applied by the Israelis; surprise, fighting spirit, concentration and mobility, among these surprise was the most important and the others either secondary or means to achieve the former. When these three latter principles were achieved, surprise was achieved and when surprise was achieved, the battle was won.[179] Thus, it seems that at the tactical level the Israeli way of waging war rested indirectly on the teachings of Wingate, Sadeh and the PALMACH commanders, who had been pupils of both of these men. According to this, it is therefore also not surprising that traits of the indirect approach can clearly be seen in the operations of the War of Independence.

On the whole, Liddell Hart has been a controversial figure in Israel. Some people denied his influence, but more admitted it, including many high-ranking commanders. For example, this official acknowledgment can be seen in Encyclopaedia Hebraica, which says: "Even before the Israel Defence Forces were created, the *Haganah* organisation paid great attention to Liddell Hart's theories. The commanders of the *Haganah*, and after them the commanders of the IDF, saw in them a solution for the war of the few against the many. It is therefore not surprising that several of Liddell Hart's books were translated into Hebrew."[180]

On the whole, the Israeli army fought with varying success. There are several reasons for this. First was the inexperience in implementing and co-

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In his letter to Liddell Hart, Yadin mentions that Lorch was also a keen advocate of Liddell Hart.

[179] Allon (1979), p. 223 – 224.

Yadin's second, quoted article *Beshviley Machshava Tzvayit* was an introduction to the collection of essays published by *Ma'arachot* Publishing House in July 1950. According to Yadin, on the whole the major lessons of the War of Independence were as follows: Morale of the Jewish people; the ability to totally mobilise the forces of the Jewish community; unified command over all forces; the contribution of settlements in defence enabling the use of mobile offensive forces; the tactical and leadership skills of commanders especially in the middle and lower echelons, but also the ability to apply these in the higher echelons including multi-branch operations; night-attack skills; knowledge of the terrain of the battlefield and finally, full utilisation of the Strategy of the Indirect Approach. Though this list is optimistic, it gives insights into the Israeli art of war during the War of Independence in a wider context.

[180] J. L. Wallach's letter to Liddell Hart 27 June 1967, LH 2/22 and Kimche, Jom: Liddell Hart and the Hagana. Jewish Observer and Middle East Review, August 26, 1960, LH 15/5/304, part 2 of 3, p. 25.

The quoted part of *Encyclopaedia Hebraica* was attached in Wallach's letter.
According to Kimche, there was probably no body of military men anywhere in the world that has been more influenced by Liddell Hart's flexible doctrine than the commanders of the *Haganah* and its successor, the Israeli Defence Forces.

ordinating combined operations, though partly this was a consequence of a lack of equipment. This was partly compensated for with skills in small-unit tactics and partly with the maintenance of aim. Second, many individuals had no war experience, although WW II had just ended. Third, a common language was a problem, especially amongst new-comers, which naturally formed a barrier to understanding training and orders. Finally, especially on the Transjordan front, the enemy – the Arab Legion – was good enough to resist the Israeli advance.

In the period of the War of Independence, the revolution in the art of war caused by crew-served weapons and sophisticated systems replacing individual weapons as a decisive means of warfare had not yet reached the Middle East, including Israel. Mostly for this reason, Arab fire was not well co-ordinated at the strategic and operational levels, which was a great advantage to the Israelis. However, at a tactical level the fire was significant, but the Israelis mainly succeeded in avoiding this inferiority with their idea of small group tactics. Major General Israel Tal, one of the developers of the Israeli Armoured Corps and later a minister in Israel's government, describes these tactics in his article *Israel's Defence Doctrine* in Military Review in 1978. According to Tal, the Israelis, who were at first unable to compete with the superior firepower of the Arabs, avoided expensive frontal assaults and chose the mobile way of "fighting on the objective" instead of "fighting to the objective with fire". In its basic form, this means that movements covered by darkness and advances along the least expected lines, where supporting firepower was not of decisive importance, were applied. Finally this method of fighting obliged the Arabs to face the Israeli soldier in close combat, which had a psychological effect, without speaking of the better fighting skills of the Jews.[181]

Favouring small group tactics, many Israeli operations seemed scattered and therefore also in contradiction with the principles of war, especially with the aim of concentration. In reality this was not the whole truth. Because of the organisational structure, various units ostensibly operated independently, but in reality the Israelis applied the principle of "maintenance of objective", which compensated for the lack of fire-power.[182] Principally this method of fighting was based on a decentralised command system, where emphasis was put not so much on orders on how to reach the objective, but on the overall framework and destination of the operation. This suited the mental outlook of Israeli soldiers, who were already trained to think and fight independently. This decentralisation of decision-making power was to form a firm base for the command system of mobile warfare in the coming years.

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[181] Tal, Israel: Israel's Defence Doctrine, Background and Dynamics, Military Review March 1978, p. 26.

[182] Luttwak & Horowitz, p. 54 – 55, 59 and 61.

This definition is used by Luttwak and Horowitz. According to the authors, the Jews lacked a military tradition, which allowed plenty of scope for original methods and new ideas. With one exception, this can be accepted. This innovation was not adequate to compensate for the lack of skills in co-ordinating combined operations.

5.5. The seed of mechanised manoeuvre

In the operations of the Southern Command in the final phase of the War of Independence, and also to a lesser degree in "Operation *Hiram*" in the upper Galilee, the tendency was to exploit already adopted tactical skills. The principles of war that the Israelis followed were quite similar to Fuller's and Liddell Hart's principles. According to Yigal Allon, nine principles of war were adopted. They were: Maintenance of aim, Initiative, Surprise, Concentration, Economy of force, Protection, Co-operation, Flexibility and Consciousness of purpose or cause.[183]

The emphasis on taking advantage of terrain conditions and enemy weaknesses is a question of the balance between human and material resources, as Martin van Creveld puts it in his book *Command in War.* According to Creveld, this means a heavy premium on compensating factors of a mental nature: individual daring, maintenance of aim, improvisation and resourcefulness, all of which still remain key elements of the fighting doctrine in the IDF at every level.[184] Since the War of Independence this also included the full use of terrain by deep penetrations into enemy lines of communications and command posts, and outflanking pincer operations against exposed and vulnerable enemy flanks. The Israelis acted best at the platoon and company level, but they also succeeded in concentrating their forces for larger efforts up until the end of the war. Frontal attacks were rare, but they were used in areas where no other choices were available. Nevertheless, the Israelis tried to defeat the enemy with mobility in both indirect and direct offensives. In these operations, the Israelis used mechanised units and motorised infantry in two different ways: light-armoured jeep-units for encirclement operations and mechanised units followed by infantry to breach enemy lines with rapid breakthroughs in populated areas.[185]

The use of jeep-borne units reflected the growing tendency towards mobility. In the final offensive phase of the War of Independence, the need for a modern cavalry arm, which combines high mobility and cross-country capacity with a comparatively great firepower, was revealed. Especially in the Negev desert and in the Sinai, where there was enough room for deep operations and

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[183] Allon (1970), p. 44 and correspondence between Liddell Hart and Allon, LH 2/2/61/3 and 22.

In the early 1950s Allon studied in London. He was also known in military circles. On 4 November 1960, the *Guardian* published an article on Allon, who was then seen as the best Israeli commander during the War of Independence. Allon's book *The Curtain of Sand* was also published in English at this time.

[184] van Creveld, Martin: Command in War, Harvard University Press, Cambridge, Massachusetts and London, England 1985, p. 196.

The compensating factors were *heaza* (individual daring), *dvekut bamatara* (maintenance of aim), *iltur* (improvisation) and *tushia* (resourcefulness).

[185] A copy of Yaacov Dori's letter to Mr. da Costa 17 June 1949, LH 15/5/304, part 2.

See also The Story of the Defence Forces. Focus on the Guardians of Israel, Israel Today and The Jewish Times, June 16, 1967, p. 5, Dayan, Moshe: Story of my Life, Weidenfeld and Nicholson, New York 1976, p. 71 and 71 – 86 and Forty, George: Tank Commanders. Knights of the Modern Age, Firebird Books, Poole Dorset 1993, p. 169.

a decisive victory was the objective, at least on the operational level, this need was acute. Besides, jeep-units could also be used in pre-emptive guerrilla style operations to harass the enemy, which, for its part, already reflected the dual-purpose nature of Israeli forces in the coming years. Special units had to be suitable for use both in conventional warfare and in counter-guerrilla operations.[186]

Jeep-borne commando battalions were established in several brigades, and combined to fight together with motorised infantry. The tactics and organisations of the jeep-battalions were quite similar to that of the British Long Range Desert Group used in North Africa in WW II against Rommel's forces. There is a clear reason for this. During the War of Independence, operations on the Southern Front were the responsibility of Colonel Avidan (earlier Koch). Colonel Avidan had served in Wingate's unit, was one of the founders of PALMACH and during WW II had fought with a detachment of several other PALMACH members in Captain David Sterling's Long Range Desert Group in the SAS. According to Kadish, a still more important link between the British concept of long-range penetration and the Israelis was Colonel Israel Karmi, who was also a veteran of the British special troops in North Africa. Karmi established the first Israeli commando battalion on the British model and created its tactics based on the combination of fire and movement and encirclements where mechanised forces were to be used in penetrations and infantry to hold the terrain. The battalion commanders had nevertheless, according to Kadish, rather an important role in creating the tactics of their own force. In addition, according to Yaacov Dori, the attacks of the jeep-units also had similarities with the actions of Lawrence of Arab. The battles of jeep-units were to become the source of legend in Israeli military folklore. These forces were used in late-night, long-range raids on major Egyptian bivouacs, on reconnaissance missions, to protect the flanks of the main thrusts, and to give fire support for mechanised infantry. Most of the missions were implemented in accordance with the principles of indirect approach and were strictly similar to the principles of manoeuvre warfare as well. Rather than forcing or luring the enemy out of position, the aim of the operations was functional dislocation; to neutralise the enemy's forces or make his strength inappropriate.[187]

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[186] A copy of Yaacov Dori's letter to Mr. da Costa 17th June, 1949.

See also Katz (1996), p. 53.
Ben-Gurion's aim was not to fully destroy the Egyptians, which is a sign that he already thought ahead to the time when the hostilities would end.

[187] A letter from Yuval Ne'eman to Liddell Hart 13th October, 1958, LH 2/18 and interview of Professor Alon Kadish.

Colonel Avidan resigned from the Army in 1950 after disputes with Ben-Gurion.
Israel Karmi was Prime Minister Golda Meir's military adviser during the Yom Kippur War.
See also Katz (1996), p. 53 and 280, a copy of Yaacov Dori's letter to Mr. da Costa 17th June, 1949 and interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber.
The most famous of the commando battalions were the *Negev* Brigade's 8th Battalion (Avraham Adan, later General and commander of the Armoured Corps fought in this battalion), Moshe Dayan's 89th Battalion in the 8th (Armoured) Brigade and the 54th Battalion (*Shu'alei Shimshon*, *Samson's Foxes*) in the *Givati* Brigade. According to Katz, this latter battalion became the reconnaissance unit (*Sayeret Shirion*) of the 7th (Armoured) Brigade.

Martin van Creveld also sees similarities with German armoured warfare during WW II in the operations of jeep-units. Although Yigal Allon, the commander-in-chief of the Southern Command, could not be suspected of having studied armoured operations, his 8th Armoured Brigade commander, Yitzhak Sadeh, obviously had. Meir Pa'il confirms this, though originally Sadeh's ideas on armoured warfare might also have been based on the thinking of F. O. Miksche, whose book *Blitzkrieg* in addition to Foertsch's *Kriegskunst Heute und Morgen* (*The Art of Modern Warfare*) was at that time the only published book that described the *Blitzkrieg* concept and the use of mechanised forces within this framework. In the Sinai and the Negev from beginning to end, the operations were conducted with much improvisation against a background of inadequate means. Once the breakthrough had been achieved, an "expanding torrent" into the enemy's rear installations and lines of communications was formed. For example, this can be seen in the occupation of Beersheba, which was like a stroke of lightning, whereas the subsequent drive into the Sinai represented an "expanding torrent", which was, according to van Creveld, a brilliant, small-scale copy of the German breakthrough at Sedan, France in spring 1940. The encirclement of Rafah was also very similar to Rommel's offensive at Gazala May – June 1942, where he pushed his armoured spearheads between two British forces and threatened to surround both.[188]

However, on the whole the operations of the jeep-battalions were more successful than the battles of the armoured units. The failures of the armoured formations were mostly the consequences of obsolete WW II surplus equipment, and of inadequate co-ordination and rigid tactics. In the early phases of the war, tanks were used in frontal attacks as single gun platforms to cover infantry, as was the case in Latrun on the central front and in Iraq Suedan on the southern front. However, towards the end of the war the 8th Armoured Brigade was already evincing clear signs of switching its tanks from an infantry-support role to mobile, deep-strike operations on the model of Guderian, Manstein, Rommel and Patton, as van Creveld puts it. Nevertheless, the better experiences of the jeep-battalions was to form a trend towards emphasising mobile infantry at the expense of armoured forces during the first years of the IDF. Therefore, up until the late 1950s the IDF was an infantry-army, although the tendency towards mobility prevailed: tanks were put into an infantry support role and no concrete doctrine of deploying armoured formations was formulated by the end of the war.[189]

According to Gelber, the original commander of the Long Range Desert Group was Henry Cator, who was in charge of a company composed of both Jews and Arabs. When he was wounded, Sterling replaced him.

[188] van Creveld (1998), p. 92 and 96 – 97 and interview of Doctor, Colonel (ret.) Meir Pa'il.

In his interview, Pa'il also mentioned Miksche's influence behind the Israeli concept of armoured warfare, though he didn't exactly specify what was adopted especially from Miksche. This is, however, quite natural because Foertsch's and Miksche's ideas are very similar.

[189] Wallach: The Development of Israeli Armor Doctrine, p. 10 and van Creveld (1998), p. 158.

See also Luttwak & Horowitz, p. 68.

As a result, the Arab troops were not destroyed during the War of Independence. In any case, they were at least mauled and were, except for the Arab Legion, unable to continue the war, which had taken a more mobile form. In addition, during the last stages of the war Ben-Gurion and the General Staff were involved in disputes in which Ben-Gurion prevented the IDF from attaining military goals that the operational commanders – especially Yigal Allon, the commander of the southern front – considered to be their business. According to Zvi Lanir, Ben-Gurion's guiding considerations in this context were aimed at creating a situation that would be favourable in political negotiations after the war. Therefore, the Israelis should refrain from pressing their military power to full advantage during the fighting. In addition, there were disputes about who was the most dangerous enemy: Ben-Gurion viewed the Transjordan threat as the most hostile, while the General Staff's opinions pointed towards the Egyptians. Therefore Israeli political and military objectives diverged at the end of the war, which at least partly was due to the fact that the operational art consisted mainly of winning tactical battles. During the War of Independence tactical battles were not linked at the operational level to the grand strategic war aims.[190]

The other goal, seizing territory, was mainly achieved; the entire Galilee was cleared of enemy troops and restored to Israel, Israeli forces reached the Litani River on Lebanese territory, the Egyptian siege of the Negev was lifted and access to the Red Sea was secured. Only in the West Bank and in Jerusalem did the Israelis experience major set-backs. In this direction the enemy – the British trained Arab Legion of Transjordan – had been a tough adversary, although the mountainous terrain also favoured the Arab Legion more than the Israelis.[191]

Finally, Israel's survival in the hostile environment was also a question of will. Though the vulnerability in depth – the sorrow of Ben-Gurion especially in central Israel – remained until June 1967, the War of Independence represented the first Jewish victory in more than two thousand years. During that war the ranks of the IDF, "warrior-settlers" as van Creveld calls Israeli soldiers, represented a new generation in the traditional Jewish pacifism. The new generation interpreted the term *en breda*, no choice, as meaning fighting, not submission. According to van Creveld, it was therefore no wonder that Israeli public opinion fell madly in love with everything military in the coming decades. Thus, the IDF's successes can also never be understood without reference to its exalted position in the public mind. After the War of Independence, the awareness of the threat formed the mental basis of defence where public opinion itself was the product of a feeling of *en breda*, the

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Three of the future Chiefs of Staff came out of the mechanised forces; Moshe Dayan from the aforementioned 89th Battalion of the 8th Brigade, Haim Laskov from the mechanised battalion of the 7th Brigade used in the Galilee and Haim Bar Lev from the 9th Battalion of the *Negev* Brigade.

[190] Lanir, p. 19.

[191] Ibid, p. 40 – 41.

importance of which cannot be, according to van Creveld, exaggerated in Israeli history.[192]

[192] van Creveld (1998), p. 124 – 125 and 151.

6. THE BIRTH OF DOCTRINE

There was a hot-tempered period of debate over the subject of the future army in Israel after the War of Independence. The differences in opinion that had already begun before the war intensified when numerous PALMACH officers resigned from the newly-established Israeli Army. However, the IDF had no conventional military doctrine of its own in the period following 1948. According to Samuel Katz, strategies were based mainly on the guerrilla techniques applied by PALMACH, while those who had got their basic military education someplace else than Palestine commandeered training manuals from American, British and even *Wehrmacht* sources.[193]

The army of the War of Independence had been a mixture of *sabras* (Jews born in Palestine) and immigrants. Tactically, it was also a mixture of skills adopted mainly from their own defence organisations and from the British Army. Therefore – aside from any political disagreements – there already were differences in tactical thinking; that of PALMACH with a tendency towards improvisation, and on the other hand the view of the British-trained men who continued to put the IDF on a regular footing.[194]

An uneasy compromise was reached when David Ben-Gurion, who held the portfolios for Prime Minister and Minister of Defence, imposed a solution in favour of the suggestions of the British-trained officers. According to Bagnall, Ben-Gurion wished to normalise the army's somewhat haphazard chain of command and create a non-political military organisation. Ben-Gurion – who himself was somewhat familiar with the British system because of his background in the Jewish Legion of the British Army in WW I – understood the need for firm central direction. The army had to be put under the supervision of the ruling political leaders, without any rival organisation. According to Ben-Gurion, the creation of the guidelines for doctrine was also the responsibility of politicians.[195]

When speaking purely of organisational matters, all of the arrangements made in the IDF after the War of Independence were not so radical. During the war, and to a lesser degree since the late 1930s, an equivalent force structure had already existed. A core of permanent cadre can be seen in various PALMACH and *Haganah* groups, and in the HISH forces of the main body of

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[193] Katz (1996), p. 43.

[194] Williams (1989), p. 12, Bagnall, p. 32 Kahalani, Avigdor: A Warrior's Way, S.P.I. BOOKS / Shapolsky Publisher, Inc., New York 1994, p. 296.

[195] Bagnall, p. 32.

To illuminate Ben-Gurion's thinking, Bagnall quotes the Hebrew newspaper *Maariv* on 25 April 1973. In this interview, Ben-Gurion describes the early phase of the IDF as follows: "Until the establishment of the State, the PALMACH units were the best we had. However, with the establishment of the State, they were no longer the best but those which were formed from the ranks of the Jewish Brigade and the British Army. Anyhow, I would not accuse the PALMACH of trying to pursue a take-over role in the county. Evidently though, this had been a possibility and had not the re-organisation been forced through during a period when the state was fighting for its survival, it could have subsequently resulted in Israeli fighting Israeli, and the continuing involvement with politics within the Army."

the reserve. The real change happened in the rank and file of the units, formations and command echelons.

The British-trained officers represented the political neutrality and military professionalism in being able to organise a conventional army that coincided with Ben-Gurion's views. However, he faced a problem; what to do with the leftist PALMACH veterans who still held senior positions in the army. Because he favoured the establishment of the supremacy of civilian authority over a professional military, several retirements were announced and new appointments made. This also nearly caused a crisis; especially when Yigal Allon, the head of the Southern Command, resigned and was succeeded by Moshe Dayan. Many staff officers were greatly perturbed by Allon's dismissal, and Dayan only succeeded in getting them to stay with a lot of persuasion. In any case, Ben-Gurion's policy caused a considerable exodus of well-trained and combat-wise officers and a lot of valuable experience was lost, not to mention the tradition. Nevertheless, many younger ex-PALMACH members remained and soon afterwards the questions of operational doctrine, organisation and tactics replaced political indoctrination and different opinions in personal matters. However, in the tactical sense, the influence of PALMACH remained because training – and via this the favouring of innovative tactics – was given over to junior officers, whom in many cases were *kibbutz*-origin PALMACH members. According to Pa'il, it was Dayan who was able to combine the advantages of both PALMACH and the British-trained officers.[196]

6.1. Defence Service Law

The first Israeli Defence Service Law was drawn up based on the concepts of Ben-Gurion, Yaacov Dori and Yigal Yadin, and was enacted by the *Knesset* in autumn 1949. According to Zvi Lanir, the Israeli Defence Forces were defined as an instrumental army; the military was, and still is, nothing but a tool that carries out government-approved policy, and was therefore subordinate to efficient national supervision. It was completely separated from the party system. This latter point didn't completely materialise, as can be seen in

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[196] Rothenberg, p. 74 – 76, Luttwak & Horowitz, p. 69 and 74 and interview of Doctor, Colonel (ret.) Meir Pa'il.

According to Rothenberg, over 40% of all Lieutenant Colonels and Majors in the late 1940s came from the PALMACH. In addition, 20 Colonels out of 45 were PALMACH veterans.
See also Perlmutter (1969), p. 61 and interview of Colonel, Doctor Shai Shaul.
According to Perlmutter, PALMACH officers were worried about the disappearance of the pioneer-egalitarian spirit in the army, which might isolate the officer corps from the entire society in the end. Ben-Gurion saw the political PALMACH as a threat to the democratic state and therefore wanted to root politics out of the army. In practice, this did not happen. Officers maintained their links to political parties up until the end of the 1970s.
According to Shaul, the third thing that had an influence on the IDF in its early years were the foreign volunteers that had joined the War of Independence, the most important of them being U.S. Colonel David Marcus. According to Rothenberg, Marcus' influence was slight, because having been in General Eisenhower's staff he had little field experience. Therefore Marcus', as well as the other's, influence can be seen as being similar to the British-trained officers; they represented knowledge of the duties in a conventional army like knowledge of different arms and services, staff work and co-operation between arms.

footnote 203. The Defence Service Law confirmed the Israel Defence Forces Ordinance promulgated in May 1948, and since then it has only been changed in 1955 and in 1976. The Defence Service Law defined the overall system of the IDF, while the Military Jurisdiction Law dealt with military hierarchy, discipline and orders. [197]

The major problems in establishing a permanent army were the poor economic situation of the state and, with this in mind, the need to maintain an army large enough to cope with a variety of threats, and the need to reach and maintain qualitative superiority against Israel's adversaries. Therefore, the essence of the Defence Service Law intensively emphasised the exploitation of the entire national manpower through universal conscription of both men and women. This all was to be achieved with a long reserve service with wide annual refresher training duties, and with the utilisation of state-supported activities – like transportation, health care and communications – for dual military-civilian functions.[198]

When the 120,000-man force that was under arms was partially disbanded in early 1949, a call for professionalism prevailed. According to Colonel Shimon Eshet, former Director of Defence Planning Department in the General Staff, there was a need for a highly professional regular fighting force of some 25,000 men, with maximum mobility. The size of the force was, of course, limited by economic considerations. In a way this opinion was a reflection of the use of the PALMACH troops as a rapid deployment force against the most immediate and hostile threat in the early phases of the 1948 war. The actions of PALMACH units had showed how a regular élite force could cope with a threat – at least for a few months – and give time for a build up of a larger, non-professional force.[199]

Examples and models in support of the solution of establishing military institutions were also sought from abroad. However, the Israelis clearly understood that whatever might be accepted as a basis for the solution, it had to be adopted to local demands and conditions. General Yigal Yadin, who became the Chief of Staff after Dori in November 1949, and Yadin's successor as head of Operations Branch, General Mordechai Makleff, also preferred the use of a 25,000-man framework to train and staff an ever-available, rapidly deployable citizen-army; a militia. After visiting Switzerland in 1949, Yadin and Makleff created a system of their own based on the assumption of a short warning period that, for its part, was a consequence of the small size of the country. In any case, unlike Israelis have generally claimed, the system that

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[197] Ben Meir, Yehuda: Civil - Military Relations in Israel, Jaffee Center for Strategic Studies, Tel Aviv University, Columbia University Press, New York 1995, p. 33 – 36 and Lanir, p. 51. The Military Jurisdiction Law was enacted in 1955. In 1976 after the Yom Kippur War and in the wake of the Agranat Commission's report, both the National Service Law and the Military Jurisdiction Law were revised, and a new law The Basic Law: The Army was enacted.

[198] Rothenberg, p. 71.

See also van Creveld (1998), p. 115.
According to van Creveld, regular reserve training also strengthened the cohesion of units. Besides, the reserve units experienced little personnel turbulence, and remained together for many years.

[199] Lanir, p. 5.

was incorporated in the Defence Service Law of 1949 was not unique, rather it was quite similar to models from other countries. Nor was the Israeli application completely similar to the Swiss system, because the Israelis had a bigger permanent cadre.[200]

According to the Defence Service Law, the armed forces were based on an active army consisting of a professional cadre of permanent officers, N.C.O.s, certain specialists and conscripts, a trained civilian reserve and the territorial defence units. In addition, the already established NAHAL organisation was put on a regular footing. The situation and organisation of the General Staff (*Mate Ha'Klali*), territorial and functional commands and staff branches were also confirmed almost entirely along already existing lines. The commanders of the Navy and Air Force, commanders of the territorial Commands and the functional Armour Command and Training Command were placed directly under the command of the Chief of the General Staff. In the second tier, were the branch chiefs; Paratroop and Infantry, Artillery, Signals, Engineers, Supply, Transport and Ordnance. GADNA (youth organisation) and NAHAL had their own commands, although practically they belonged more in the second tier. According to Bagnall, theoretically the members of this second tier were all on a par with those of the first, but in practice responsibilities and prestige reduced their actual status.[201] The organisation of the General Staff can be seen in Appendix 6.

The major exception in the organisation when compared to other armies was the absence of a ground forces command. According to Gunther Rothenberg, the explanation for this was the position of the Chief of Staff. In the IDF there was and still is no Commander-in-Chief of the Defence Forces, and therefore the Chief of Staff was defined as being the sole executive head of the entire multi-service army. Because he was always chosen from the ground forces, there was no need for a separate ground forces commander. The second-in-command was the Chief of the General Staff Branch, although a special post of Deputy Chief of Staff was sometimes created during war-time.[202]

In all, the overall role of the Chief of Staff was not clearly defined in the Military Jurisdiction Law, although the law granted the Chief of Staff a wide variety of powers and authority in the internal matters of the army. The chain of

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[200] van Creveld (1998), p. 113 – 114 and IDFArc., file 28/1529/1952.

See also Luttwak & Horowitz, p. 76 – 78 and Lanir, p. 5 – 6 and 82.
Neither Luttwak's and Horowitz's views on the uniqueness of creating the main bulk of an army from reservists nor Lanir's opinion on the corresponding system of the Swiss are quite true. Countries generally relied heavily on reserve manpower at the time. The Swiss system also relied and still relies mainly on reserves. The difference in the Israeli army was that the Swiss had a very small standing army. The lack of a permanent force was compensated for with reserve militia forces that spent long periods annually in refresher training. In Israel, the permanent army consisting of professional soldiers and conscripts was bigger. Instead, the Swiss habit of not rotating reservists between various units was and also is quite similar to the Israeli system.

[201] Luttwak & Horowitz, p. 77, Rothenberg, p. 73 and 78 – 79 and Bagnall, p. 32 – 33 and 51.

[202] Rothenberg, p. 77 and Luttwak & Horowitz, p. 94.

command was not clear, particularly with regards to the Chief of Staff's position in relation to Defence Minister on the subjects of strategy, doctrine and armament of the army. Besides, none of the first ten Chiefs of Staff up until the mid-1970s could have been promoted to that post if they had been considered to be in opposition to the overall political direction of the government. According to Rothenberg, this was not dangerous because military interference with the political process did not exist.[203] But, there remained a question of how on the other hand. The special position of Ben-Gurion caused a strange situation with regards to decision-making, as he was both Prime Minister and Defence Minister. However, in the first two decades of the state during Ben-Gurion's tenure this was not a problem for the IDF and its doctrine because the Chief of Staff was included in the small inner circle of decision-makers. Nevertheless, in the decades to come this non-institutionalised role of the Chief of Staff lessened his power, even in purely military terms. Later, especially during the Yom Kippur War, the weaknesses in the high level chain of command were revealed and changes both in the Defence Service Law and the Military Jurisdiction Law were made.

The branches of the General Staff were renamed Manpower, General Staff, Quartermaster, with Training added in 1953 and Intelligence in 1955. The territorial commands were reduced to three; Northern, Central and Southern. These commands had a dual role. They were responsible administratively for all operational troops deployed in their areas, and for supervision of local defence units along the border. In war, the commands assumed responsibility for operations in their areas. The territorial commands were divided into districts and consisted of two main elements: a mobile element for major operations comprised of brigades and a static regional defence element. The latter consisted of the Local Defence (*Merchavit*) and the NAHAL Corps, forming district units in agricultural settlements. Their task was to control their own regions mainly by defensive means. These settlements, which had to survive any war with the primary task of defending their homes and to check or delay enemy advances along particular axes, were, in addition, organised into sub-districts containing two or three settlements. Finally, the settlements were supported by district units consisting of infantry battalions manned mainly by elderly men.[204]

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[203] Rothenberg, p. 74 – 75 and Ben Meir, p. 34 – 36.

See also Lanir, p. 51, Perlmutter, (1978), p. 16 and Bagnall, p. 49.
Perlmutter cites Meir Pa'il, who says that the role of policy has always given way to military matters when there has been a threat. This coincides with the views of Professor Handel presented on page xxvii.
According to Bagnall, the General Staff could present their views to the Minister of Defence, but otherwise they played a direct role in formulating policy only when called upon by the Cabinet. Therefore, the degree of political direction in military affairs has depended very largely upon the personality of the Minister of Defence.

[204] Luttwak & Horowitz, p. 95 and 105 – 106 and Zamir, Meir: The Structure of the Israeli Army, R.A.C. Centre Bulletin No 4, Dec 1968, LH 15/5/314, p. 10.

See also Rothenberg, p. 77.
The original *Haganah* intelligence service *Shai* became the nucleus of five separate intelligence organisations in the 1950s; *Mossad* (Central Intelligence and Security Agency), *Shin Bet* (Security Service, internal police agency), the Research Section of the Foreign

In addition, the Air Force and Navy Commands were also unified with the General Staff, which afterwards controlled all branches of the defence forces. According to Yigal Allon, this latter consolidation was made to achieve maximum co-operation, efficiency and coherence. Partly, the unification was made for economic reasons; the Arab-Israeli theatre of operations has been continental and this gave priority to the development of the branches.[205] In addition, acting Chief of Staff Yadin did not pay much attention either to the Air Force or to the Navy, which at least temporarily reduced the status of both the Air Force and the Navy.[206]

6.2. The infrastructure of national service

The Defence Service Law created universal conscription for all 18 year-old males and females with some exceptions for religious groups, females and minorities. This system has only been slightly modified since. The men were called up to serve for three years, followed by reserve army duties up to the age of 50. Women were ordered to serve for two years and, although they were potentially liable for duty up to the age of 24 if unmarried, they have rarely been called to peacetime reserve service.[207]

Training of the active forces continued almost uninterruptedly after the War of Independence and already in 1951 the IDF had regular brigade-scale war games, exercises and manoeuvres while the Air Force and Navy had their standby training. In 1952 the General Staff also gave instructions on reserve training. The basic principle was to maintain the composition of the troops in accordance with the conscription cycle. In rehearsals, a four-year cycle was chosen. During the first year, the force served in security tasks in the border

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Ministry, the Special Intelligence Section of the Police and Military Intelligence. According to Rothenberg, before the 1950s military intelligence relied heavily on the human element, but afterwards it began to receive electronic equipment, and soon eclipsed the other agencies. This was the reason why the fifth centre, the General Staff Intelligence Branch was created, for reasons of synergy.
Merchavit was also a part of the reserve system, manned by older men (50 - 55 years) living in villages near the border, including women trained for military tasks.

[205] Allon, p. 50 – 51 and Amit, M: Factors Influencing Security Concepts of the State of Israel, Reprint Norsk Militaert Tidsskrift no. 1 – 1963, Hurtigtrykk, Oslo 1963, p. 13.

[206] Luttwak and Horowitz, p. 94 – 95, Rothenberg, p. 78 - 79 and Williams (1989), p. 90 and 93.

According to Luttwak and Horowitz, operationally the Air Force and Navy did not lose very much in this consolidation. They maintained their own staffs, which were responsible for their own forces. The only visible change was the loss of direct access to the political level. Naturally, however, this reorganisation caused objections at the beginning and obviously also some tension between the representatives of different branches.

[207] Katz, p. 41 – 42 and Williams (1989), p. 20 and 324 – 325.

In 1956 Druze males were drafted for compulsory service and the following year conscription was also introduced for Circassians. Bedouins continued to serve on a voluntary basis. These minority conscripts have since usually been used in separate units in counter-guerrilla action; against smuggling, espionage and sabotage activities and later against *Fedayeen* guerrillas and PLO terrorism.

areas. In the second year, commanders had 40 days training in tactical and staff exercises. The third year consisted of 21 days of unit exercises for privates only. In the fourth year, all this culminated in two-week manoeuvres. It seems, however, that initially, before the system had been fully established, the IDF also carried out reserve exercises that were not included in the four-year cycle. For example, the IDF already tested different things like co-operation between infantry and tanks and co-operation between operational forces and territorial forces in war games and several manoeuvres in August 1952. Substantially the exercises that were held in the early 1950s were rather modern. The tendency to also combine small landing operations and the support of the air force in these manoeuvres reflect the nascent concept of deep penetration.[208]

Theoretically this reserve system, established on sound foundations by the end of 1952, solved at least temporarily the manpower problem of the young IDF. In practice the truth was different. Up until the verge of the 1956 Suez crisis the IDF remained mainly poorly trained and equipped. There were two major reasons for this. First was the question of armament. The Tripartie Declaration announced by the western powers had limited arms sales to the Middle East and if arms were available, the Israelis did not have enough money for wider arms procurement. The second and more important reason was the training system. Ben-Gurion wanted to connect military, economic and Zionist goals together. This meant that, after basic military training, 12 months of the conscription had to be devoted to agricultural instruction. However, the idea was neither very popular among the recruits nor did the generals like it. Agricultural training diminished the time available for training, and thus reduced combat readiness, which was incompatible with the requirements of a modern army with sophisticated weapons. In addition, Chief of Staff Mordechai Makleff indirectly supported Ben-Gurion because he was a keen advocate of professionalism on the British model. Makleff favoured a smaller but more efficient force. This all lead to an overall decline in the training level of conscripts and reservists, although a small core of the army obviously, in Makleff's concept, got better training.[209]

Finally in 1954 during Moshe Dayan's tenure as Chief of Staff the Israelis abandoned combining agricultural and military training with the exception of the paramilitary NAHAL. Unlike his two predecessors, Dayan was worried by the poor performance of his conscript army. This led to changes. Dayan removed most of the civilian functions in the IDF and reduced its support

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[208] IDFArc., file 18/1529/1952, file 28/1529/1952, file 5/25/1954 and file 142/25/1954.
The number codes of the forces that joined these exercises give reason to believe that they were called up from the reserve.

[209] Rothenberg, p. 72 – 73 and 85, Williams (1989), p. 301, House, Jonathan: Toward Combined Arms Warfare: A Survey of 20th Century Tactics, Doctrine and Organization, Combat Studies Institute Research Survey No. 2, Fort Leavenworth, Kansas August 1984, p. 172 and O'Ballance, Edgar: The Sinai Campaign 1956, Faber and Faber, London 1959, p. 15 – 16.
See also Ne'eman, Yuval: This War of Our Resolution and how to Safeguard its Achievements, p. 8.
Makleff had been a member of Wingate's S.N.S., as well as a Major in the Jewish Brigade.

elements. According to Rothenberg, Dayan also revived the combat spirit of the War of Independence.[210] One can agreed upon this. Tactically, the army adopted traits of the jeep-patrols of 1948 in the form of mobile infantry. In addition, the innovative "follow me" leadership principles were created during Dayan's time. In 1956, while perhaps not the best in terms of equipment, a mentally tough and unified reserve army was already well established.

6.2.1. NAHAL – territorial defence

There are three unique organisations in the Israeli army; NAHAL (*Noar halutzi lohemet*, Pioneer Fighting Youth), which is a paramilitary agricultural organisation, a paramilitary youth organisation called GADNA (*Gdudei Noar*, Youth Battalions) and the Women's Corps of the IDF, CHEN (*Chel Nashim*, Women's Army, it basically means loveliness). Both NAHAL and GADNA have their own separate functional commands in the General Staff, as mentioned earlier. CHEN has an inspectorate equivalent to the branches because it is an organisational part of the IDF. All of these special organisations have their own significance to the Israeli military institution, and to the military art as well. Therefore, a short look at these organisations is called for in this context.

After the enactment of the Defence Service Law, the General Staff ordered the reorganisation of the NAHAL as a fully fledged regular unit of the IDF. In this formula, NAHAL was, according to Williams, separated from GADNA. Although this special framework was organised from GADNA, NAHAL was not afterwards an offshoot of the pre-military GADNA anymore. NAHAL has had its own role in the Israeli concept of mobile warfare. In the early 1950s Ben-Gurion's idea was, according to Shaul, to build settlements as the first line of defence, though this concept had existed already before the War of Independence. This was the birth of NAHAL, which was created to complete the territorial defence in the most hostile and isolated locations. A system equivalent to this does not exist in other armies anymore.[211]

Originally, *Nahalnik's* (members of NAHAL) were infantrymen with two primary functions. NAHAL was meant to preserve the pioneering elements and traditions of the settlements, including self-defence. At the beginning, the level of training in the NAHAL Corps was low – as was the case in the whole army. Therefore in the early 1950s, Chief of Staff Moshe Dayan started to modify this concept by stating, that "Israel needed more soldiers, not tomato farmers", and after 1954 less time was spent on agricultural training and more on military duties. Secondly, NAHAL soldiers completed the organisation of territorial defence and still do this, although their importance in the territorial defence has declined in recent years. While territorial defence was built merely on local and stabile systems, the members of *garinim* (nucleus) were settled in more active roles to defend and patrol border areas where there were specific security problems. Territorial defence, on the whole, was based on a dug-in, hedgehog-

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[210] Rothenberg, p. 91.

[211] Amit, p. 45, Williams (1989), p. 302 – 304 and 310, Luttwak & Horowitz, p. 20 – 21 and interview of Colonel, Doctor Shai Shaul.

like defence system of mutually supportive house-groups supported by a force equivalent to a company combat team. *Nahalniks* were doing the same thing, but in addition they also applied more offensive means. The overall aim was to get more depth to the defence of the country, to get time to mobilise and organise reserve forces, and to channel enemy penetrations by keeping defensive footholds as bases for the offensive operations of mobile forces. These principles also represent the force dichotomy of manoeuvre warfare; territorial defence including NAHAL – and of course the peace-time active army – formed the ordinary or holding force, while the mobilised reserve forces took the role of the extra-ordinary force or main attack.[212]

The length of service for *garinim* boys and girls was equivalent to those who served in the IDF ranks. However, when compared to the two-years basic training and field practice of the general conscript service, the male soldiers of NAHAL spent nine months of this time on agricultural labour, excluding five days military service monthly. Training was divided into five stages: basic military training, agricultural training, history and natural history courses, advanced military training and operational tasks. The girls in the *garinim* were to remain in the settlements when the boys went off to perform the military part of their duties.[213]

In its early years, the NAHAL system also caused problems for the whole IDF, the biggest of them was officer education. According to Louis Williams, the IDF had accepted a revolutionary concept in the case of NAHAL youngsters by agreeing not to break up peer groups. The result was that a large part of the good potential manpower was removed from the IDF's selection processes, including officer and N.C.O. selection, as well as élite units and specialist roles. Therefore the original training system was diversified and more emphasis was put on military training. Each *kibbutz* was required to supply its quota of cadets for non-commissioned officers' and officers' courses. In 1955 the NAHAL joined the paratroops and already before the Suez Crisis took part in counter-guerrilla action. In the following years the training widened yet more and the *Nahalniks* also joined the other branches, including armoured

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[212] Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 11 – 12, Williams (1989), p. 302 – 305, 310 and 313 – 315, Schiff (1985), p. 65, and Wallach, Jehuda, L: Zum strategischen Konzept Israels. Von der Staatsgründung bis zum Sechstagekrieg, Österreichische Militärische Zeitschrift, 2/1970, p. 129 – 130.

See also Lanir, p. 9 –10 and Amit, M: Factors Influencing Security Concepts of the State of Israel, p. 12 – 14 and 45 and Jewish Observer and Middle East Review, a newspaper cut of "Allon Plan", December 27, 1964, LH 2/2/61/53.
After the compulsory service, the *Nahalniks* had to make a commitment to stay in the settlement for the next five years, and after that they still had the possibility of continuing to live there. In 1987, there were 130 NAHAL holding points, of which 85 have been transferred to civilian settlements. During the 1960s border disputes, the so called "Allon plan" was also based on the use of NAHAL settlements. This plan called for a belt of settlements in the uninhabited area 8 – 10 miles west of the Jordan River. On the whole, this plan was not implemented, but it can be seen as the purest form of the original idea of NAHAL or ancient Roman settlements.

[213] Williams (1989), p. 304 and Schiff (1974), p. 106.

See also http://www.idf.il/english/organization/nahal/nahal.stm, 7 February 2001.
Today the *Nahalniks* serve four months longer than their counterparts in the IDF.

units. Since the 1956 War NAHAL units have taken part in all Israeli wars, performing at the same level as the other IDF units. In their original defensive mission, the NAHAL settlements also performed well in the Six Day War in Northern and Central Israel, when they contained Syrian and Jordanian troops until operational troops were released to this front.[214]

Since the 1950s the NAHAL Corps had been acting with a skeleton structure of battalions and companies, which had controlled and administered both wartime operations and peacetime security and night patrols. This loose framework has given more operational freedom in comparison to conventional military formations. A NAHAL unit could rotate its personnel between various settlements, while its composition and size could be rapidly adjusted without creating organisational and administrative problems. Since 1982 the NAHAL has also shared with the other troops the ongoing security duties in Northern Israel. In addition, as a consequence of the experiences of the 1982 war, NAHAL begun recruiting more personnel because the IDF needed more infantry units. This was the birth of the regular NAHAL Infantry Brigade that in 1997 was transferred to the command of the Central Command.[215]

6.2.2. GADNA – youth organisation

GADNA had already been founded in 1940. After the enactment of the Defence Service Law, the role of GADNA was also defined. GADNA was not a voluntary youth organisation of national defence as in many countries. In Israel, most boys and girls were required to join this organisation at the age of fourteen. In peacetime, these youngsters were to perform military drills, receive rudimentary instruction in handling arms and map-reading, and tour Israel on camping excursions. In wartime, GADNA youngster served in hospitals, in post offices and helped in different logistic missions, but during the War of Independence some units also engaged in the Battles of Jerusalem and Haifa. However, the emphasis on training has shifted from arms training to sports and physical training in recent years.[216]

Although GADNA has its equivalents in other countries, its military aspect in Israel has in general been broader than elsewhere. Therefore it is often said – mainly outside Israel – that this is a sign of militarism. However according to Zeev Schiff, the Israelis accentuate the point that, because of the special situation of Israel, this has been a social question. In this way, it is possible to both psychologically indoctrinate the youth with a security consciousness, and,

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[214] Williams (1989), p. 303 – 305 and 313 – 315, Rothenberg, p. 81 and http://www.idf.il/english/organization/nahal/nahal.stm, 7 February 2001.

[215] Bagnall, p. 45 – 46, Zamir, p. 11, Williams (1989), p. 316 and http://www.idf.il/english/organization/nahal/nahal.stm, 7 February 2001.

[216] Schiff (1985), p. 102 – 104, Schiff (1974), p.106 and Williams (1989), p. 302.

on a practical level, to teach them basic military skills useful in their coming military service.[217]

6.2.3. CHEN – women's army

The idea of establishing a Women's Corps was not new anymore at the end of the 1940s. Orde Wingate already drew up schemes with Ben-Gurion in 1941 for raising a Jewish Women's Service. At the time this concept did not, however, bring forth results, but the idea was to remain. Nevertheless, the truth was that some 4,000 women served voluntarily in the British Army in auxiliary troops, and some even in special troops. These women formed the IDF women's branch in June 1948 – called the Auxiliary Corps at first. In the Defence Service Law, the Women's Corps was placed on a regular footing. On the whole, the Women's Corps was modelled on the pattern of the British Auxiliary Territorial Service, where women had served as drivers, clerks and in different missions in support echelons.[218]

The main purpose of Israel's manpower planning in establishing the Women's Corps was to place every able-bodied man in a combat unit. However according to van Creveld, the decision to exclude women from combat units after the War of Independence was seen as a humiliation, especially to the women of PALMACH, ETZEL and LEHI who had also participated in combat missions, some of them even being captured or killed. Because the IDF was and still is overwhelmingly combat-oriented, women were not wanted in combat units. If a women was injured or killed, the blow to unit morale would be almost intolerable without mentioning the possibility of women being taken prisoner. In 1953 however, the concept of excluding women from combat units was abandoned, mainly to preserve the social and human atmosphere in line battalions. Women's presence in combat units did not, however, mean that the Israelis also started to train women for combat missions, rather they were instructors and served in support jobs. The other reason for women's service was the psychological aspect. Women, who had served in the army and became mothers, could implant a consciousness of defence in their children. Today only about 50% of the women who are available are required, which provides an opportunity to select only women with comparatively high academic abilities.[219]

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[217] Schiff (1985), p. 102 – 103.
See also Amit, M: Factors Influencing Security Concepts of the State of Israel, p. 12.

[218] Sykes, p. 336, Schiff (1974), p. 120 and Williams (1989), p. 322.
In 1941 Wingate was in a military hospital in Scotland and met Ben-Gurion there.

[219] Schiff (1985), p. 110 – 111, van Creveld (1998), p. 120 and 264 – 265 and Williams (1989), p. 330 and 324.
See also Amit, M: Factors Influencing Security Concepts of the State of Israel, p. 12 and Bagnall, p. 40.
Occasionally in the wars after the War of Independence, Israeli women have also ended up in combat.

From the very beginning women were put together with men and not into their own units, although the latter was planned at first. However, for basic training the Israelis formed two different training installations only for women. Since the 1970s, the tasks of women have become more varied and widened from auxiliary jobs to various kinds of instruction and supervisory tasks in different branches and military courses. Artillery was the first combat arm to use women instructors to train combat troops in the 1970s. Since then this concept has spread to the Armoured Corps as well as to other branches. Officers posts up to the higher ranks are also open to women today, although the variety of higher posts for women is quite narrow because the prerequisite for entering most of these jobs has been service in combat units.[220]

6.3. The birth of doctrine – synthesis of the past and the present

After the War of Independence, the *Jewish Standard* newspaper published several articles analysing the defence problems of Israel. Two of them were based on interviews with Liddell Hart conducted by the correspondent Mr. da Costa. According to Liddell Hart, "the Israeli Army would in the near future be involved into semi-guerrilla operations, which will stress the need of mobility. Only where the country would provide a real natural fortress, it will be practicable to plan static defence. In Israeli case this came not into question. Therefore plans had to concentrate on tactical agility and on mobile units." Mobility meant in Liddell Hart's words "improvement of armament, where Israel could profit much by developing technical originality and education of individual soldiers to act in the battlefield in the spirit of tactical instinct."[221] This all clearly shows that Liddell Hart was very well aware of the performance of the IDF at that time. All of what he suggested was based on the improvement of existing organisation and methods, which had already proved to be practical. In addition, the future scenario shaped by Liddell Hart was to materialise. Up to this day, the Israeli army has had to prepare not only for a full-scale invasion by Arab countries, but also for guerrilla operations during inter-war periods.

The two above mentioned articles were soon commented on by Chief of Staff Yaacov Dori, who placed great value on Liddell Hart, as mentioned earlier. However, instead of preserving the rather successful army of the War of Independence, new structures and new doctrines were to be formulated on the basis of rational thought. The preceding war had been a series of tactical

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[220] Williams (1989), p. 245, 323, 325, 332, 335 – 336 and 339, Schiff (1985), 109 – 114, van Creveld (1998), p. 264 – 265 and Katz (1996), p. 196.

According to Williams, some jobs that women perform are very near to the conditions of the battlefield today. For example, in the Engineering Corps some women were qualified to work as mine-sweepers and in bomb-disposal teams. Women's officer education was started as early as May 1948.

[221] da Costa: Israel's Strategic Position, the Jewish Standard 29th April, 1949, LH 15/5/304, part 2, p. 5 and da Costa: The Shape of Israel's Army. Semi-Guerrilla Operations - 40 000 Needed as Minimum, the Jewish Standard 13th May, 1949, LH 15/5/304, part 2, p. 3.

According to Liddell Hart, the Army had to have a strength of at least 40,000, in addition to an Air Force and Navy of 10,000.

battles without a higher strategic framework. Battles were fought to gain what was to be reached. This was not the policy of an independent state. Nevertheless, at the tactical level there was a lot in the Army of Independence that could be applied. Therefore, early in 1950 General Dori appointed an Establishment Team under the command of Colonel (later Lieutenant General) Haim Laskov to produce a blueprint for the basis of the IDF's future force structure and fighting doctrine. The Establishment Team was expected to unify different principles, and provide a framework into which the standing army and the newly conceived reserve brigades could be integrated harmoniously.[222]

Israel is a classic model of a nation whose strategy – and via it doctrine – has been dominated by geographic circumstances. In the background of the Israeli fighting doctrine was a scenario that was composed of potential threats. Israel had to be prepared for the worst; all Arabs were potential enemies, and especially the neighbouring Arab countries posed an imminent threat.[223] In his book *The Making of Israel's Army* Yigal Allon defined Israel's theoretical scenario – which can also be placed also in the early 1950s – as follows:

> "The main military strength of the Arabs lay in Egypt; Israel's main geo-strategic weakness was in the coastal plain facing Jordan, which was the soft under-belly of her posture. The greatest danger Israel faced was a co-ordinated, simultaneous surprise beginning with an attempt to annihilate her air force, and followed by a main effort to split the country into several parts by a combination of land attack and landings on the coast; these actions being supplemented by guerrilla attacks by paratroopers and irregulars, and accompanied by mass bombardments and air raids against the civilian population and industries as well as military targets."[224]

According to Israel Tal, these preconditions have changed only a little since the 1950s. Although there have been variations of the scenario, basically the core has remained the same up until today. According to this outlook, the defence planners of the early 1950s under the command of Generals Yigal Yadin, Mordechai Makleff and Moshe Dayan outlined the main conditional factors behind the Israeli military strategy. The dominant consideration affecting their thinking was the mission of the state of Israel. According to Professor Handel, the history of the Jews magnified the Israelis' sense of insecurity; therefore the psychological and cultural influences of Jewish history

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[222] A copy of Yaacov Dori's letter to Mr. da Costa 17th June, 1949, LH 2/7, Tal, p. 22, Williams (1989), p. 178 and Luttwak & Horowitz, p. 89 and IDFArc., file 381/900/1950.
In addition to defining the main lines of the operational doctrine, the Establishment Team was to review the organisations of the brigades, create six to eight brigade headquarters and develop staff procedures, develop tactics and organise equipment and training.
See also IDFArc., file 396/8284/1949.
Before the creation of the Establishment Team, already in late summer 1949 a department was established in the IDF General Staff to collect the lessons of war.

[223] Handel, p. 535 – 537.

[224] Allon (1970), p. 50.

– most prominently the genocide of the Jews during WW II – shaped the environment in which Israeli strategy was formulated.[225]

In Israel, a systematic analysis of the organisation of the defence questions seems to have been started soon after the creation of the Establishment Team. From the early 1950s on, Israel developed its strategic-operational doctrine, which in this context can be seen as including both strategic prerequisites and means and operational principles. Yoav Ben-Horin and Barry Posen examine the development of Israeli doctrine since the 1950s quite thoroughly in their study *Israel's Strategic Doctrine*. Although the origin of the doctrine; i.e., when the doctrinal principles were first taken into use, is not clearly shown in Ben-Horin's and Posen's study, nevertheless, it outlines the main trends behind the development of the doctrine. Therefore, this study is useful for summarising the Israeli military doctrine; especially, because other studies dealing more or less with this subject are along the same lines as Ben-Horin's and Posen's work. It is also important to note that doctrine is not a static theory behind practice. Ben-Horin and Posen have understood this and have therefore tried to analyse the backgrounds to different solutions in different times. In addition, these researchers have been able to discover several key principles that have remained behind Israel's doctrine since the 1950s, although their emphases and relationships have varied.[226]

Ben-Horin and Posen divide Israeli military doctrine into three levels: foreign policy, political-military elements and operational elements.[227] The political-military can be interpreted as "war strategic" in this connection or strategic in today's terms. Conditioning elements have undergone only minor changes since the 1950s. On the other hand, political-military means have varied depending on the military policy of different governments. The main principles of the operational doctrine were fully crystallised only after the 1956 War, but they have since changed only slightly.

Conditioning factors

The conditioning factors were already defined in the 1950s. According to Ben-Horin and Posen they are:

- The threat. All Arabs are potential enemies. An especially feared type of war has been the war of attrition.

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[225] Handel, p. 542 and Tal, p. 22.

See also le Mire, Henri: Tsahal. Histoire de l'armée d'Israel 1948 – 1986, Librairie Plon, Paris 1986, annex No 1.

Up until the 1956 Suez Crisis, three men were responsible for developing doctrine. They were Eliyahu Ben Hur, Haim Laskov and Yitzhak Rabin. Of these men, the most significant to the future armoured doctrine was Laskov. Laskov was not only in charge of doctrinal development, he also served as Commander of the Air Force, Commander of the Armoured Corps, and Chief of Operations in the early 1950's.

[226] Ben-Horin & Posen, p. 1, Allon (1970), p. 64 – 65, Lanir, p. 22 – 23 and van Creveld (1998), p. 123.

Strategic-operational is Martin van Creveld's term.

[227] Ben-Horin & Posen, p. v – viii.

- Constraints. This consists of geography, population, economic resources and the tendency for superpower intervention.
- Assets and opportunities. These include a geography for acting on interior lines, the fractious politics of the Arabs and finally the social nature of Israel, which has a good enough educational base for a quality defence as well as experiences from the past for the mental aspect of defence.[228]

These pre-conditions for the Israeli defence doctrine have not undergone major changes despite the peace treaties with Egypt and Jordan.

Political-military elements

At the strategic level, Israel's doctrine consists of the political-military elements. The contents of these principles have been revised several times, although the main issues have remained. According to Ben-Horin and Posen, the strategic doctrine can be defined as a central core of generally shared organising ideas concerning a given state's national security problems. In this way, the definition can be seen as a "means-ends" chain, in which military capabilities are connected to military outcomes, which are themselves connected to political outcomes. Political-military elements are not the main subjects of this work. A short summary must, however, be made because strategic elements of doctrine interact with the operational elements. As Ben-Horin and Posen put it; political-military elements reflect and address the conditioning factors identified, while operational elements serve as the means to the political-military elements or the ends of the doctrine.[229]

The political-military elements are:

- Deterrence,
- *Casus belli*,
- Military victory (*Machria*, decisive victory),
- Acceptable casualties,
- Autonomy and dependence,
- Defensible borders.[230]

Deterrence can be seen as a strategy that aims to dissuade possible adversaries from aggression in advance by the threat of punishment.

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[228] Ibid, p. 4 – 12.

See also Tal, p. 22 – 23, Allon (1970), p. 50 and 62 – 63 and Wallach (1970), p. 129 – 130. All these sources deal with similar issues as Ben-Horin and Posen without major differences.

[229] Ben-Horin & Posen, p. v, 1 and 3.

When Ben-Horin and Posen conducted their study at the beginning of the 1980s, it was not yet possible to find a description of Israel's strategic doctrine in any comprehensive formal statement by the Israeli government. Therefore, this research is based on books by civil and military decision-makers, on Israeli practise in crises, on wars and on the force posture of the IDF.

[230] Ibid, p. vi – viii and Allon (1970), p. 61 – 62.

Decisive is the most commonly used translation of the Hebrew term *Machria*.

Deterrence is usually understood as a defensive strategy, including in Israel. This principle, which is understood in a rather practical way in Israel and is not very precisely defined, has been applied in different ways in the past. *Casus belli*, in this connection a justified reason for military action, is closely linked with deterrence. For the Israelis, *casus belli* is and has been an officially announced theoretical limit; i.e., hostile action which would limit Israel's living or security conditions, and in this way gives a justified reason for open military action. Deterrence is, according to Shaul, also linked to the armed forces; first the quality of armed forces will serve as a mean that raises the threshold that might lead to a war and second, if deterrence don't work, armed forces will be needed anyway. This also coincides with Liddell Hart's views that deterrence means the inhibition of warlike actions without a move from peacetime dispositions, as already discussed in chapter 1.[231]

An overall military victory, a final blow to the enemy, has been impossible to implement as David Ben-Gurion already noted in 1955. Therefore the next best objective was a decisive victory, which in Israel's doctrine can be seen in two ways; the first aim was to paralyse enemy forces and the second the conquest of territory. The former has had a relationship to deterrence, a crushing defeat of adversaries in offensive operations was believed to reinforce deterrence. The conquest of territory for its part gave depth to the defence in operational terms, and at the strategic level provided a bargaining card in negotiations on borders and peace settlements.[232]

Israel's small population has made it very sensitive to casualties and therefore it has led the Israelis to seek different operational solutions than a long-term war of attrition. However, this has not been – as Ben-Horin and Posen show – uniformly straightforward. In the case of "*en breda*", no choice, Israelis have also accepted the probability of suffering relatively high losses, both at the operational and at the tactical level: losses that are acceptable from the viewpoint of the entire war. In this way, this principle is also linked to the military victory that has been seen as a prerequisite for deterrence. A decisive victory might prevent the next war or at least lengthen the peacetime, and in this way reduce the total losses.[233]

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[231] Ben-Horin & Posen, p. 12 – 18 and interview of Colonel, Doctor Shai Shaul.

See also Allon (1970), p. 70 – 71.

Allon lists reasons for a *casus belli*. They are: an imminent threat of an enemy offensive, signs of preparations for a surprise enemy attack on Israeli air-bases, air attack on atomic and scientific institutions, extended guerrilla warfare, a Jordanian military pact with another Arab country and the closing of the Straits of Tiran.

[232] Handel, (1994), p. 537, Ben-Horin & Posen, p. 18 and Tal, p. 23.

[233] Ben-Horin & Posen, p. 21 – 23 and Kahalani (1994), p. 340 – 342.

According to Kahalani, Israelis also use the phase "sticking to the target" in this context. In its basic form, it means commanders' difficulties in estimating whether to carry out a mission on the basis of the price they are willing to pay. Therefore Kahalani stresses that such decisions should be made by people who have the ability to think profoundly, people who possess a large personal library of dog-eared history books; i.e., an understanding of the context of policy and warfare. The final aim should be drawn so that the war ends with the fighting men standing at the best possible point to start political negotiations.

Autonomy and dependence is a consequence of the past. Israelis have mainly fought their wars without direct foreign aid, which – although it would have been available – could not have helped because of the fast tempo of modern wars. However as originally defined by Ben-Gurion, this has not meant a total materiel self-sufficiency, although it has led to a very high-level of arms production in Israel. Political dependence, for its part, has mainly been seen as a threat to strategic decision-making. In an emergency this might give the initiative to adversaries because of the delay it brings.[234]

The emphasis on seeking defensible borders has existed in Israel since the early 1950s. The main question – and a very disputed one – has been; defensible borders without peace or, on the other hand, compromise peace treaties with the neighbouring Arab countries, which might weaken operational defence without adequate foreign guarantees. In 1955, Israel's Embassy in London published a leaflet with an article entitled *Peace but not suicide*. The problem of secure borders can already – and this was when the doctrine was still under creation – been seen in this article. The main question in this leaflet was how to deal with the absence of strategic depth in a hostile environment without maintaining a large permanent army. In the eyes of the ruling socialist parties, the border settlements were the key to the possession of *Eretz Yisrael* (the territory of Israel). Although the army could conquer territory, only the *kibbuzim* and *moshavim* had the power to liberate territory from desolation and convert it to Jewish land. In this concept, the border settlements formed artificial defence zones, which were put into practise with territorial forces that would both provide cover and give an early-warning to mobile forces. Therefore up until the early 1960s, the solution to the lack of depth was, according to van Creveld, mainly defensive. However, this tendency changed already before the Six Day War when the quantity of forces was seen as inadequate to control and defend the borders. In addition, heavy emphasis was put on first-rate intelligence. To avoid falling victim to a surprise attack and to prevent over-hasty pre-emptive action, a first-class intelligence service had to be developed and linked to the various elements of Israel's defence forces. The dilemma between defensible borders and peace treaties has prevailed up until today, although the geo-strategic situation in Southern and Central Israel is better today from the Israeli point of view than before the peace treaties with Egypt in 1979 and with Jordan in 1994.[235]

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[234] Ben-Horin & Posen, p. 23 – 26.

See also Lanir, p. 168.

According to Lanir, the turning point in the search for self-efficiency in the arms industry was the French embargo in the early 1960s. This created a feeling that Israel must be – at least in critical material – self-reliant in equipping its armed forces because of the fear of being cut off from its foreign sources of armament. This objective has never been completely reached.

[235] Peace but not suicide, Israel Faces Danger, Embassy of Israel, The Narod Press, London November 1955, LH 15/5/307, p. 15, Handel, p. 537, Tal, p. 23, Allon (1970), p. 53, 73 – 75, 88 and 99 and van Creveld (1998), p. 106 – 107.

The leaflet *Peace but not suicide* is an approximate description of Israel's defence problem in the early 1950s. Although it was published, this leaflet can not be interpreted as an official doctrine although some basic elements behind the question of defence can be seen in the text.

When considering Israel's defence problems on the whole, Israel has – with the exception of the 1956 Sinai Campaign and the war in Lebanon in 1982, when the imminent threat of war did not exist in Israel – always reacted to its opponents' initiatives. According to Handel, it has also never really developed a coherent long-term strategy. Instead, the military-operational doctrine has been concrete because of the imminent threats; geographical vulnerability, fear of annihilation, political isolation and finally national survival. Therefore, according to him, the logic of military operations has often determined strategy. This contradicts the Clausewitzian principle of the primacy of policy in military matters, where a strategic victory can't be evaluated only in military terms because the results of a war will never be final without consolidated political agreements. A strategy where military operations determine strategy can clearly be seen in Israel in the past decades. The operational victories have been astonishing, while up until the Camp David peace treaty with Egypt the question of peace did not materialise at the political-military level.[236]

From the early 1950s onwards, foreign policy became subservient to security needs. Zvi Lanir calls this strategy the "denial approach". The rule "the minister of defence is authorised to determine defence policy, while the job of the foreign minister is to explain that policy" was laid down by Ben-Gurion, and lasted, with several exceptions, up until the late 1980s. According to Lanir, the concept of denial was based on the assumption that a state has nothing to gain from initiating a war, and that the only pragmatic or moral justification for the use of force is purely defensive, to thwart an aggressive opponent's attack. Such a state goes to war only with the intention of exercising denial, and tries to finish the war when that objective is attained. While political goals dictate the military objectives in war in a Clausewitzian approach, the denial approach by its very nature embodies a clear distinction between political and military matters. Politically, the main efforts are devoted to preventing war. However, from the moment the political goals tend to fade in importance relative to the military aims, both are aimed at exploiting the full potential of the military in order to prevent the enemy from carrying out his designs and to deter him from future attacks. Kadish and Simhoni confirm this and continue that after the War of Independence a belief was born that Israel's border problems could be solved by military means. This has proven to be wrong, but at that time the younger generation of political and military leaders didn't understand that a military success could also be a political problem. In this way the pursuit of decisive victory limited their understanding of the military art as a whole, of which the next war, the Sinai Campaign in 1956 is a good example.[237]

Yigal Allon also favoured the idea of an independent Druze state as a buffer zone between Israel and Syria in the 1960s.

[236] Handel, p. 570 and 572.

[237] Lanir, p. 14 – 17, Handel, p. 560 – 561, 563 and 572 and interview of Professor Alon Kadish.

According to Lanir, annihilation means neutralisation in this context.
It should be mentioned that opinions of Israel' s success in military policy have varied greatly, as have the views of the substance of the denial approach.
According to Simhoni, before the late days of the Yom Kippur War, Israeli political and military leaders didn't understand that a war had to be settled at the political level.

Operational elements

Yoav Ben-Horin and Barry Posen list the operational elements of the Israeli doctrine as follows:

- Offence,
- Pre-emption,
- Speed,
- Indirect approach,
- Exploitation of macro-competence,
- All-arms, combined-arms.[238]

According to Professor Handel, the operational elements of the doctrine have controlled and still control Israel's style of warfare.[239] This statement can be accepted with some restrictions. Military strength as well as operational and tactical skills have mostly become, as already discussed, the solution to political-military problems. Israel's military competence has obviously lowered the barrier on the decision to go to war, which has been seen as the most advantageous way of solving threatening situations. Nevertheless, this manner of thinking has lead to a tendency to only think about war at the operational or tactical levels. Military decisions have determined political solutions, decisive victory has been more important than the political situation after the war. On the other hand, the tendency to use military means has in many cases been the only way to eliminate the threat and compensate for geographical inferiority, lack of manpower or economic vulnerability, which for its part explains the predominance of operational principles.

Doctor Ariel Levite, an Israeli scholar who has studied the background behind Israeli doctrine, sees the "cult of the offensive" behind the Israeli offensive principles. According to this concept, military organisations commonly favour offensive doctrines because these better serve the organisational interest of the professional military. In its basic form, this means that military men tend to have organisations and equipment that are suitable for offensive because the demands on them in the offensive are higher than in defence. They therefore emphasise offensive operational and tactical principles, regardless of whether an offensive orientation is congruent with

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Instead, according to Yitzhak Rabin, Israel had never, before the 1982 war in Lebanon, worked on the assumption that through a decisive victory it could impose its own conditions for peace on the enemy or arrive at a comprehensive political solution in the Arab-Israeli conflict. In 1982 this was however, according to Handel, Minister of Defence Ariel Sharon's impossible objective. Rabin's words are cited in Handel's book.
See also Ben-Horin & Posen, p. 13 and Katz (1996), p. 287.
The authors have defined denial as "means of successful preservation of the physical integrity of Israel."
According to Katz, the IDF has been guided through its operational and day-to-day existence by a principle called *Tohar Ha'Neshek* (Purity of arms), which means that deadly force should be used only as a last resort, and that only the necessary force should be used in any situation.

[238] Ben-Horin & Posen, p. viii.

[239] Handel, p. 575.

perceived national interests or prevailing technology. This has obviously been the case everywhere in general. If the organisation is suitable for offensive, it would normally be also useful for defence. This might also have been true in Israel, but it only partly describes the tendency for the offensive. In Israel, offensive fighting principles already existed when the Establishment Team started its work. Therefore, a more obvious explanation for the tendency for the offence than the "cult of the offensive" is the operational and tactical heritage of the War of Independence, where active action in Israel's circumstances had proved to be efficient. The Establishment Team only confirmed the existing practice. This conclusion does not, however, exclude the fact that the new Jewish generation that won the War of Independence wanted to get rid of the traditional pacifism, which is not, in any case, a synonym for defence.[240]

In purely military terms, it is more likely that the lack of operational depth and inferiority in manpower and arms were the most significant items behind these offensive operational and tactical means. It was not possible to compensate for these deficiencies with defensive operations. Doctor Levite also shows a similar view by saying that "the origins of the Israeli offensive military doctrine are consistent with Scott Sagan's interpretation of the offensive orientation of the European powers prior to WW I. At those times the initial adoption of the offensive doctrine was the result of a rational strategic calculus, rather than an institutional offensive bias of the military." According to this view, the Israeli tendency towards the offence can be seen as being rational; it was a consequence of an unfavourable geopolitical environment and inferiority in manpower. In addition, the Israelis stress that they have had a defensive strategy that was carried out, in the case of being attacked or threatened by attack, with offensive means on the operational battlefield. Offensive operations made it all possible: to carry the battle to enemy soil, to get the initiative and to get local superiority to defeat the enemy by measures that didn't attack his strength. The main aims behind these principles were to compensate for their own inferiority, of which the most dangerous were the imbalance between manpower and the sustainability of a war economy in a prolonged war. Besides, in the offensive it was possible to achieve a decisive victory, which would have shortened the war for its part. The chosen principles also coincide with the principles of manoeuvre warfare, especially with dislocation and disruption.[241]

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[240] Levite, Ariel: Offense and Defense in Israeli Military Doctrine, IDF Journal 20/1990, p. 11 and van Creveld (1998), p. 98 and 124.

[241] Ben-Horin & Posen, p. 29 – 33, Levite, p. 11, Leonhard, p. 79 – 80, Tal, p. 24 – 25 and interviews of Colonel, Doctor Shai Shaul, Major General Avraham Adan and Lieutenant General Dan Shomron.

Scott Sagan's statement quoted by Levite origins to International Security, 1986.
According to Shaul, the lack of operational depth was the most important thing behind the Israeli offensive orientation. Adan supports this. Territorial vulnerability forced the Israelis to favour transferring battles to enemy soil.
Shomron also stresses the aim of avoiding a long war of attrition in the tendency towards offence. Adan also agrees with this and links it to the term "decisive victory" as well.

Pre-emption is understood in Israel, as Yigal Allon says, as a pre-emptive counter-offensive or anticipatory counter-attack, though more offensive definitions have also been available, as can be seen in Israel Tal's text, which defines pre-emption as the principle of delivering the first blow. According to Zeev Schiff, it was, however, Yigal Allon who developed the theory of pre-emptive attack, and justified it politically and morally. In general, the main purpose for pre-emption is to defeat or neutralise the enemy before the fight has begun. In Israel the aim has been to compensate for the disadvantageous force ratio. This also has a close link to the offence, because the secondary aims of pre-emption are to carry the battle to the enemy's territory and to seize the initiative. However, it has been difficult to define and separate pre-emption and preventive strikes from each other in the past. According to Ben-Horin and Posen, pre-emption is a reaction to imminent threat while prevention happens when signs of hostilities are revealed. Yigal Allon calls both pre-emption and prevention by the name anticipatory counter-attack and defines them as Israeli operational initiatives taken against concentrations of enemy forces. Furthermore he links this definition to the concept of *casus belli*. This means that *casus belli* has been applied at a time when the enemy has been mustering his forces for an attack but before than he has had time to actually start his offensive. In the leaflet *Peace but not suicide* published by Israel's London Embassy in 1955 there is, however, no word on the policy of pre-emption and on the principle of transferring battles to enemy soil. This is a sign that Israel had obviously not yet fully adopted these principles in the early 1950s. In addition, the principle of pre-emption has not been a matter of course in Israel, rather it has been the end of deliberate considerations. In every single case, the fear of foreign reaction also had been to be taken into account.[242]

Speed has been essential especially because of the threat of superpower intervention, which could prevent the Israelis from reaching their war

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[242] Schiff, Zeev: October Earthquake. Yom Kippur 1973, University Publishing Projects Ltd., Tel Aviv 1974, p. 41, Ben-Horin & Posen, p. 34 – 37 and Peace but not suicide, Embassy of Israel, p. 15. See also Allon (1970), p. 73 – 75 and Wallach (1970), p. 129 – 130.

Allon does not separate the words anticipatory and counter-attack, to him the distinction was a purely verbal one. Israel's strategy was defensive and therefore the anticipatory counter-attack was defensive action at the strategic level. Prevention was also offensive at the strategic level and therefore wasn't included in the Israeli vocabulary. The aim of an anticipatory counter-attack was first and foremost to achieve air superiority to react to the imminent threat and via this to prevent further aggression. However, Allon agrees that it is difficult to distinguish the pure mustering of force without the aim to attack from, on the other hand, an imminent threat.

Wallach follows the same lines as Allon. Basically Israel's strategy was defensive, but in the cases of the 1956 Suez Crisis and the Six Day War, the policy was changed because of the threat and pre-emption became the first priority.

According to Ben-Horin and Posen, Israel's action in the 1956 Suez crisis was a typical preventive offensive, reaction to the rise of a threat, while in 1967 the Israelis reacted to the imminent threat with pre-emption.

In the article *Peace but not suicide* there is a phrase "We have never initiated war against any one and we never will. We do not covet a single inch of foreign soil as we will not permit anyone to deprive us of a single inch of our territory." Aside from the fact that this illustrates an unfinished doctrine, it also reveals the early tendency towards the concept of the denial approach, with the use of force as necessary.

objectives. The second reason for rapid operations has been the intention of avoiding long-term exhausting battle that would be unfavourable for Israel, which has always been inferior in manpower and war potential. Besides, dependence on reservists determined the doctrine; wars had to be finished quickly to avoid or at least minimise the economic paralysis caused by total mobilisation. This short war concept was, according to Adan, one of the main reasons for the future infrastructure of the IDF; the need to end wars quickly modified the IDF's force structure to emphasise mobile means like the use of armour and an air force.[243] In addition, this last point also became, after the 1956 War, a means for the Israelis to increase the qualitative gap between the IDF and the Arab armies. The aim was to use technological, tactical and operational – including leadership skills – superiority to compensate for the lack of manpower and operational depth.

The idea of the indirect approach can be seen in the background of the Israeli art of war both at the mental and at the practical level. According to Ben-Horin and Posen and Wallach, the thoughts of Liddell Hart were rooted in the Israeli art of war by Yigal Yadin and Haim Laskov, from whom Liddell Hart's ideas have spread into the officer training programs of the IDF by way of other senior officers. Wallach, who is a contemporary of Yadin and Laskov, said in an interview in May 2000 that for the Israelis Liddell Hart's thoughts were a model of flexible thinking. Although the Israelis well understood that the concept of the indirect approach was not a new invention, Liddell Hart's way of analysing modern mechanised warfare in the framework of past operational lessons fascinated the Israelis. According to Adan, indirect approach itself was the art of war; for the Israelis it has meant since the War of Independence the ability to find and take advantage of the possibilities on the battlefield. Even in the 1980s, articles detailing Israel's application of the indirect approach have been quite common in military journals in Israel and elsewhere. The indirect approach was well-suited to Israeli innovative military thinking. The mental aspect can be seen at the strategic or political-military levels; how to wage a war to achieve a decisive victory without wasting one's own forces unnecessarily. In the operational and tactical fields, the indirect approach has been quite practical; to use the least expected and least defended lines with deep pincer-movements, according to the concept of the "expanding torrent".[244]

Exploitation of macro-competence can, according to Ben-Horin and Posen, be defined as the ability of an Israeli soldier to act independently, including in an operational framework. The Israelis have emphasised qualitative factors to compensate for their inferiority in hardware in their planning and doctrine, and they have favoured maintenance of the initiative, pre-emption, motivation and fighting spirit. This all can be seen as a consequence of the experiences of the

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[243] Ben-Horin & Posen, p. 37 – 39, Handel, p. 545 and interview of Major General Avraham Adan.

[244] Bond, p. 238, Ben-Horin & Posen, p. 39 – 42, Handel, p. 545, interviews of Colonel (ret.), Professor Yehuda Wallach and Major General Avraham Adan and Wallach, The first anniversary of Liddell Hart's death, p. 5 – 6.

Wallach's article *The first anniversary of Liddell Hart's death*, which was sent to Lady Liddell Hart in spring 1971, was obviously published in Armoured Corps Quarterly in spring 1971.

Haganah and PALMACH, in other words the use of learned and already tested tactical and operational skills.[245]

The value of co-operation between branches has been known in Israel since the War of Independence. The emphasis on carrying battles quickly onto enemy territory was the central principle in the construction of combat formations. However, the economic framework put restrictions on the appropriate balance of arms and branches. This led the Israelis to give priority to armoured formations and their air force at the expense of other branches despite different opinions in the General Staff. Tanks and combat aircraft best represented the principles of the operational doctrine, the most important of them being pre-emption, offence and speed. In the 1960s, the Israelis adopted a lightning war or *Blitzkrieg*-type fighting doctrine, where tanks and air power bore the brunt of the assault while other branches were integrated into the armoured formations in supportive roles. This was to cause problems in years to come, especially when battles were fought in the enemy's depth. Only after the Yom Kippur War did the synergistic combat multiplication became partly true in the modified Israeli brigades and divisions.[246]

Today, the IDF doctrine can be seen; for example, on the Internet home pages of the IDF. A comparative analysis of today's doctrine and that presented by Ben-Horin and Posen reveals that the central principles have not undergone major changes in the past decades. In addition, analysis shows that Ben-Horin and Posen have succeeded quite well in outlining the main elements of the doctrine. In the present doctrine, the conditioning factors are combined together with the political-military elements and are defined as basic points. The operational elements of today also are defined in parallel with past elements, although their contents have widened. In addition, the Israelis emphasise the defensive character of their strategy today as they already did in the 1960s, although it is still carried out by offensive tactics, including on the operational level. In the 1990s the defensive component consists of a small standing army with an early warning capability, a regular air force and navy and an efficient mobilisation and transportation system. The offensive part of the operational doctrine includes maintenance of the ability to move over to the counter-attack, which is achieved by a co-ordinated multi-arms force that is able to transfer the battles rapidly to enemy territory. All this is to be attained with the qualitative capabilities of both men and armament. As a conclusion, the only visible addition to the previous doctrine is anti-terrorist warfare, which is today seen as responding to a substantial threat. On the other hand, it is astonishing that counter-insurgency is not mentioned in the new doctrine, although elements of revolutionary warfare have formed a certain type of threat to the Israelis since the territorial occupations of the Six Day War.[247] The current IDF doctrine can be seen in Appendix 7.

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[245] Ben-Horin & Posen, p. 42 – 43 and Handel, p. 549.

[246] Ben-Horin & Posen, p. 43 – 45, House, p. 177 and Tal, p. 36.

[247] http://www.idf.il/English/Doctrine/doctrine.htm, 13.7.1999.

6.4. Organisational and operational changes

Organisational development was started simultaneously with doctrinal development. Prevailing General Staff thinking in the early 1950s was that the spearhead had to be infantry; however, there was a clear preference for paratroops. Armour was first kept as a support echelon for infantry.[248] In a way this was quite natural. Many Israeli commanders and staff officers were British-trained, and the British did not have significant traditions in the use of independent armoured formations. Germany was defeated in WW II despite her capabilities in armoured warfare, and as usual, the tactics of victorious states prevailed. This was also the case in Israel for a while. Tanks were not seen as having a central place on the battlefield although Russian armoured formations did well against the Germans on the Eastern Front. In addition, the Israelis themselves did not have very good experiences with their use of tanks during their War of Independence, although the problems were mainly caused by poor equipment, not by the lack of tactical skills. On the whole, however, Gelber tends to see the British influence as the major factor behind the development of the IDF up to the Six Day War (inclusive), after which came the U.S. influence.[249] It should, nevertheless, be remembered that since the 1950s the German practises of WW II have been behind the British military art in many ways.

The first task of the planning group was to design a new combat formation for ground forces. Two models were considered. The first was whether the Israelis should have divisions divided into brigades, or only brigades, letting the already established territorial commands play – in addition to their territorial responsibility – both the corps and divisional roles. The second model included both independent brigades and a number of divisions. The result was the self-contained infantry brigade that became the primary force of the IDF. Gideon Avidor has defined the primary force as "that formation level that was capable of carrying out the majority of tasks on the battlefield independently and for a defined period of time, usually a few day." According to Luttwak and Horowitz, there were two major reasons for this decision. First, brigade headquarters had become the focus of tactical planning during the War of Independence, although service and support units were only assigned to brigades temporarily. The second reason came from doctrinal needs; the basic tactical formation had to be capable of swift offensive in depth. In this context it should, however, be mentioned, that the Establishment Team report criticised the task that was given to the team as being partly unclear, especially on the question of how to organise the command structure above the brigade level. This issue was to cause the Israelis operational problems in the coming years.[250]

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[248] Williams (1989), p. 178.

[249] Interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber.

[250] Luttwak & Horowitz, p. 89 – 90, IDFArc., file 381/900/1950 and Avidor, Gideon: From Brigade to Division, Military Review, October 1978, p. 65 – 66 and 68 – 69.
Gideon Avidor was a Colonel in the IDF in 1978.
See also Love, Kenneth: Suez. The Twice Fought War, Lowe & Brydone Ltd, London 1969, p. 492 and Dupuy (1992), p. 147.

Inside the brigades, a triangular structure was chosen, which was more or less standard internationally. Each brigade was organised into three rifle battalions, a jeep-mounted scout company, headquarters and support units. In addition, every brigade also had additional combat elements; a heavy mortar battalion and sometimes field artillery and anti-tank gun units, but not in a fixed form. The brigades were not totally self-contained for sustained combat in the enemy rear because of the small size of their additional units – especially artillery. However, this was not decisive in either the 1956 War or the Six Day War because of the character of the battles. After the initial clashes, the need for artillery in mobile movements against the enemy's dispersed efforts in depth was slight. With the occasional additional units, newly created brigades were capable of either operating independently or joining in larger formations.[251]

The minimal role of artillery was caused by several reasons. Although the Artillery Corps had been established during the War of Independence, there was no tradition of the use of artillery in the *Haganah*. Therefore, artillery officers faced problems when trying to make necessary changes. In the early 1950s, inter-branch exercises showed that armoured and paratroop echelons were full of impatient and fast moving men. They did not need artillery in the mobile infantry tactics – surprise and night attacks – favoured by the General Staff or later in the lightning war doctrine, and were unwilling to understand that moving artillery and preparing to fire was a time-consuming process. Finally, there was the quantity and quality of the guns; they were miscellaneous, towed and few, only some 150 pieces. Therefore, after the breakthrough battles artillery was left behind because the guns were unsuitable for mobile operations especially in pathless terrain. In addition, a large number of artillery weapons in the brigades were replaced by mortars, but because they were mainly heavy, they were also tied to the roads. At the battalion level, there were no artillery or mortars and therefore immediate fire support was impossible.[252]

According to Kenneth Love, there were 30 to 35 brigades organised before the 1956 War, each with a permanent staff as well as a permanent supply clerk for each battalion. According to Dupuy, 18 of them were mobile in 1956.

[251] IDFArc., file 65/346/1957, Rothenberg, p. 86, Dayan, Moshe: Diary of the Sinai Campaign, Cox & Wyman Ltd., London 1966, p. 220 – 221 and Yuval Ne'eman's letter Office of the Military, Naval & Air Attaché 90-4/667 to Liddell Hart, 1st March, 1960, LH2/18, p. 2 – 3.

Compositions of the brigades varied, though the main type was a triangular structure. Besides, additional units attached to brigades were different because of the tasks allotted to them, but the lack of armament and equipment was also one central reason.
The self-contained brigade was not unique. For example, the Finns used brigade formations during WW II (the Winter War and the Continuation War in Finland) in areas where flexibility was needed.

[252] Dupuy (1992), p. 212, le Mire, p. 108, Gawrych, George W: Key to Sinai: The Battles for Abu Agheila in the 1956 and 1967 Arab-Israeli Wars, Research Survey No. 7, Combat Studies Institute, Fort Leavenworth, Kansas 1990, p. 24 and Fall, Bernard, B: The Two Sides of the Sinai Campaign, Military Review 4/July 1957, p. 11.

According to le Mire, only one battery attached to 27th Mechanised Brigade was self-propelled (105 mm). The organisations of auxiliary units in other brigades also varied. For

According to Williams, the Artillery Corps' combat doctrine was originally based on British and French principles, but they gradually gave away to an Israeli approach. Emphasis was placed on self-propulsion and updated techniques that would enable the artillery to provide constant, accurate and rapid support for armoured and infantry formations. This aim was not achieved before the 1956 War. The artillery was mainly used within the frameworks of other units and therefore concentrated fire was not available in the 1956 War.[253]

Antiaircraft and antitank missions were combined together at brigade level with a mixed unit of antitank and antiaircraft guns.[254] This shows the slight importance attached to these branches. Nevertheless, it is obvious that the planning group endeavoured to find balanced multi-branches combinations, but priorities in arms procurement prevented this. Besides the Air Force was seen as being capable of coping with the aerial threat, and in the offence tanks and infantry with recoilless guns were seen as being able to block the enemy's armoured forces.

Above the brigade level, the Israelis created a new operational command, the *Ugdah,* while territorial commands maintained their operational and administrative tasks in the principal theatre. The *Ugdah*s were tested for the first time in the manoeuvres in the early 1950s. The term *Ugdah* has generally been translated as division – the size of an *Ugdah* was equivalent to a division – but having organisational flexibility, as well as functionally, it was nearer to a Corps command. Whereas the division was a large multi-branch formation that was a fixed organisation, according to Wallach, the *Ugdah* represented a combat team; an operational super-formation command, to which forces and means were allotted in accordance with its mission. The composition of these combat groupings varied from two to five brigades, in accordance with the particular task allotted to them, and the way the battle developed. Extra strength in reconnaissance, armour, infantry, artillery and engineer troops was added or subtracted without destroying any organic framework and without imposing a stop for re-grouping. This organisational solution was seen as providing the IDF organisational flexibility which for its part reflected the operational flexibility. Nevertheless, in the 1956 War the *Ugdah*s were still in test-use but their headquarters were made more or less permanent to improve the readiness of the IDF during the peace-time.[255]

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example, the 7th Armoured Brigade had both artillery and mortar battalions while the 37th Mechanised Brigade had none.

[253] Williams (1989), p. 237.

[254] Gawrych (1990), p. 24.

[255] Wallach, J. L: Voice of Israel, translation of a broadcast delivered on 15th July 1967, LH 15/5/304, part 2, p. 3, Liddell Hart, B. H: Strategy of a War, Encounter, February 1968, LH 15/5/304, part 2, p. 17, Allon (1970), p. 52 and IDFArc., file 65/346/1957.

See also IDFArc., file 142/25/1954, file 26/130/1958 and interviews of Professor, Colonel (ret.) Yehuda Wallach and Colonel, Doctor Shai Shaul.
The *Ugdah* was tested at least in August 1952 in a multi-brigade manoeuvre and in May 1956 in a command and communication exercise where new field manuals were also tested. In addition, at the same time the Armoured Corps had its manoeuvres in the Negev.

Most brigades were infantry brigades. In the wake of the 1956 Suez Crisis, Israel had 18 mobile field force brigades of which three were armoured, one paratroop and the rest infantry brigades. The fighting doctrine also rested on the use of infantry, albeit, in a mobile manner. According to Shaul, the traditional infantry was reserved for special areas like Jerusalem. The emphasis on mobile operations and the tendency to transfer the battles to enemy territory began, according to Kadish, during Moshe Dayan's tenure as Chief of Staff, which started in 1953. However, although Dayan favoured mobile operations, he was basically an infantry man to whom a tank was a fire support weapon. Therefore mobility and initiative was to be achieved with War of Independence-type motorised battalions equipped with jeeps and half-tracks. According to Luttwak and Horowitz, the tactics were defined as being offensive in spirit, planning and organisation, even when the task was defensive. Because the borders were so long in relation to the size of the forces available to defend them, a linear defence was impractical. Therefore the brigades were not to hold their ground passively but, served as a base to mount counter-attacks supported by the Air Force and paratroopers. In this concept Kadish sees a link between Dayan and Wingate. They both emphasised the same things; offensive spirit, mobile defence, the transfer of the battles to enemy territory, night fighting etc.[256] Nevertheless, most brigades had no battlefield mobility because they were dependent on civilian cars, but this was not so important because of the small size of the area of operations.

6.5. The birth of the Armoured Corps

Infantry brigades did not provide a solution to the doctrinal aims of speed and surprise. This was obviously not completely understood in the General Staff, as Michael I. Handel puts it: "During the 1950s Israel's military doctrine lacked the synchronisation, for the infantry oriented IDF did not appreciate the potential of armoured warfare." According to Yuval Ne'eman, battalion and company assaults, and sometimes even brigade offensives, were generally based on deep penetration tactics and attacks from the flanks and rear. Smaller units, of a platoon or less, were often sent deep behind the enemy position with the aim of starting the attack inside the enemy's deployments. In this way, the general infantry doctrine looked like commando tactics. Theoretically this all coincided completely with Liddell Hart's ideas on manoeuvre with small units, although the Israelis mostly did not have the ability to concentrate forces quickly because of a lack of mobility. In addition, the failures of the tank battalions in the War of Independence were still fresh in

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In an interview, Wallach compared *Ugdah*s to *Lego*-bricks that could be put together as desired.
According to Colonel Shaul, *Ugdah*s were also used in the 1956 War in the sense that they were tested.

[256] Dupuy (1992), p. 147, Luttwak & Horowitz, p. 91 and interviews of Colonel, Doctor Shai Shaul and Professor Alon Kadish.
The planning group also presented a defensive doctrine, which was obviously linked to the settlement defence, as earlier discussed. However, this solution was never, according to Luttwak and Horowitz, put to the test.

many minds. Therefore, the General Staff favoured the idea of creating mobile infantry forces more than tank units. Nevertheless, not all staff officers and commanders shared this view. According to Williams, soon after the War of Independence the 7th Brigade commander Colonel Yitzhak Pundak – originally an infantry man but after WW II a graduate of the French Army's Armour School – argued to his superiors, that "the tank was an offensive weapon of war, not a rusty piece of metal on hand for holding actions." For him offence was the key to military victory and the tank, even in small numbers and with limited crews, was an all-powerful tool of war.[257]

Under the command of Colonel Pundak, tanks started to operate at a battalion level with combined combat teams of tank and mechanised infantry battalions. At the very beginning, tank warfare manuals were, according to Williams, purchased from open sources and staff war colleges in the United States, Great Britain and France. Senior armour officers in the IDF were forced to study them, write full-length Hebrew-language evaluations and then distribute them among the troops. There is no evidence of Russian influence or the use of Russian manuals at this time.[258]

Another supporter of the tank – and a very important factor in future IDF armour doctrine – was Colonel Laskov, who was known to have been in agreement with Liddell Hart's theories. Liddell Hart's influence on Israeli armoured doctrine will be discussed more in chapter 8, which is concerned with the era from the late 1950s to the early 1960s, when the IDF armoured doctrine was really created. Laskov also maintained that the tank was an offensive tool, which solved all its tactical problems by attacking in columns with independent missions. In Laskov's concept, armoured formations were spearheads of the ground forces acting to penetrate deep into the enemy's rear without trying to secure their flanks or supply lines by scattering their forces to hold ground. Exhausting frontal attacks, as well as tank-to-tank battles were to be avoided, while the anti-tank mission was given to the anti-tank artillery. Adan confirms this. According to him, before the 1956 War the main aim of the armoured forces was to find gaps in the enemy's lines and strike against his vulnerable targets like command posts and artillery. Only during the 1960s, when the IDF finally deployed its first well-equipped tank units and enough strength to concentrate tanks, did the enemy's armour

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[257] Williams (1989), p. 44 – 45 and 179, Ne'eman, Yuval: This War of Our Resolution, p. 16 and The Story of the Defence Forces. Focus on the Guardians of Israel, p. 5 and Handel, p. 550.

There is no strict evidence of the influence of French armour doctrine on the Israeli art of war. However, the similarities of the armoured doctrine created by Liddell Hart, Guderian, de Gaulle and Miksche to Pundak's applications are striking.
See also Michael Ben-Gal's letter to Liddell Hart 5th January, 1955, LH 2/5/64/6 and Liddell Hart's letter to Michael Ben-Gal 31st December, 1954, LH 2/5/64/5.
It is likely that Colonel Pundak knew Liddell Hart personally. From 11 January to 7 February 1955 Colonel Pundak – the Director of Armour – visited British armoured forces (BAOR) and Israel's military attaché tried to arrange an appointment for Pundak to meet Liddell Hart. It can not be determined from the correspondence whether this summit was held.

[258] Williams (1989), p. 44 – 45 and 179.

became the primary target of the tanks, but then also, not in frontal battles if avoidable.[259]

Speed and surprise were favoured in Laskov's concept at the expense of shock effect which reflected the influence of the indirect approach and the search for mobility. The planning group drew up a list of the priorities in the conduct of armoured warfare. It went as follows: speed, surprise, manoeuvrability, concentration of forces and shock effect. The purchase of fast, though thinly armoured, French-built *AMX-13* tanks before the 1956 War coincided with this doctrine; they provided mobility and speed but were not the type of tanks that lead an armoured spearhead, they merely represented vehicles that could support a lightning strike.[260]

One immediate recommendation of the Establishment Team was the creation of an Armoured Corps. This reflects Laskov's influence behind the decision but his concepts didn't materialise until the end of 1953. According to Wallach, after the War of Independence there were four possible solutions for creating an armoured corps. The first proposal was to attach one armoured battalion to the organisation of a chosen infantry brigade in each territorial command. This concept can be seen as a continuation of the use of commando battalions during the War of Independence. The second idea was to form a supporting brigade in each territorial command, including one armoured battalion and artillery and anti-tank units. The third choice was to create a country-wide armoured brigade which would have provided tank detachments for the commands according to the need. The fourth proposal was to establish independent armoured battalions for each territorial command. The Chief of Operations, Brigadier Yigal Yadin's proposal to establish one regular reinforced armoured brigade as a country-wide armour reserve won, though the idea of a reserve never materialised. The decision was justified with the demand that in possible future wars the IDF should have at least one armoured brigade in every primary effort and it might not be entirely out of the question that they might be compelled to perform two primary efforts simultaneously.[261]

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[259] Luttwak & Horowitz, p. 91 - 92, Williams (1989), p. 180, a letter from Haim Laskov to Liddell Hart 12th April, 1959, LH 2/13 and interview of Major General Avraham Adan.

In his letter to Liddell Hart, Laskov lets Liddell Hart know that he has been an advocate of Liddell Hart's ideas, which was also well known in the IDF.

According to Luttwak & Horowitz, the planning group was not wrong in seeing that armour could best be used to fight an independent battle (without slow-moving infantry) of deep penetration in the enemy rear. If "without slow-moving infantry" can be interpreted as meaning without mechanised infantry, the intention went against the ideas of combined-arms. This trend was to be reinforced in the 1960s.

[260] Luttwak & Horowitz, p. 91 – 92 and Katz (1996), p. 44.

[261] Williams (1989), p. 178 and 185 and Wallach: The development of Israeli Armor Doctrine, p. 10 – 12.

See also IDFArc., file 6/13/1957.

In summer 1955, the Armoured Corps trained, anyway, to transfer armoured forces from one front to another. Nevertheless, these forces were battalion combat teams of the 27th and 37th Armoured Brigades, not the whole brigades. The time limit when the transfer was to be carried out was 24 to 48 hours.

Already at the end of 1949, the organisation and equipment of the reinforced armoured brigade were published. However, material problems had a heavy impact on the intellectual ones, especially on the formulation of an armour fighting doctrine. According to Colonel Wallach, the operative plans of the early 1950s considered the principal mission of armour to be the stopping of an enemy invasion in the south of the country. The tank advocates estimated that since the Arab force build-up in the coming years would be largely based on modern tanks, the next full-scale confrontation between Israel and its Arab neighbours would be a tank war in the Sinai and Negev.[262] This all shows the fact that the tank was already seen among the armour officers as the best weapon against another tank. Quantitatively inferior to possible enemies, armour could not, however, be used defensively in attrition warfare dominated by fire exchange or solely in frontal attacks. Therefore, the emphasis on the use of armour in the south of the country shows that tanks were best put to use in accordance with the newly-created doctrine of the IDF in an area where there was space for mobile and deep flanking operations.

Armoured tactics were developed in exercises that Luttwak and Horowitz describe as a time-consuming effort of "trial and error". In these trials, tanks drove over, under and through every kind of obstacle to find out what they could do. Luttwak and Horowitz stress the Israeli originality in their tactical ideas. For lower echelons, this can be seen as having been true. In operational issues, the Israelis applied, however, foreign concepts in many ways and the IDF manuals in the early 1950s were, according to Gelber and Shai, mostly copies of British ones that were, furthermore, based on German WW II-era manuals. Nevertheless, according to Gelber, already in the 1956 War the Israelis also had improved versions of the foreign manuals and this work was continued after the war in the late 1950s and in the 1960s.[263]

In 1950 the IDF's tactical tank doctrine was presented for the first time in a Senior Officers' Course exercise. This doctrine was a combination of the British application of "aimed fire" and the "suppressive moving fire" emphasised by the Germans and also by the Soviets later during WW II. According to Luttwak and Horowitz, "aimed fire" means that as soon as infantry comes into contact with the enemy, it will dismount from its trucks or armoured carriers to take up positions from which it can fire accurately. "Suppressive fire", for its part, means that accurate small arms fire is of little use on the modern battlefield because the enemy can rarely be seen. Therefore, forces should be trained to advance without pause, firing on the move whenever possible, and while automatic fire from moving vehicles could be too inaccurate to do much real damage, it can, however, achieve a breakthrough

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[262] Wallach: The development of Israeli Armor Doctrine, p. 12 and IDFArc., file 381/900/1950.

[263] Luttwak & Horowitz, p. 92 – 94 and 128, interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber and discussions with Doctor, Colonel (ret.) Hanan Shai.

See also IDFArc., file 5/25/1954.

There were also copied tactical manuals. In June 1952, for example, a manual on long-range penetration was introduced. It was based on the experiences of foreign armies during WW II. Although this was a company-level manual, its principal idea was operational deep penetration.

by pinning down the defenders so that their fire becomes ineffective. In Laskov's concept, fire and movement were one; the maximum number of bullets were to be fired at the enemy in the shortest possible time in order to destroy him. Therefore speed was also needed.[264] What the real difference with the German armour doctrine was is difficult to say. However, Laskov obviously emphasised accurate suppressive fire – in other words shooting but also other individual skills, which in itself can be seen as a reflection of the doctrinal aim of macro-competence – skills that could be achieved with intensive training and with high-quality armament. These concepts later became the basis of all ground forces in the IDF, not only of the Armoured Corps.

Despite the fact that the ability to undertake mobile operations was seen as one of the most important subjects in developing the IDF, in the early 1950s the tendency to emphasise the role of infantry over that of tanks still dominated. Although armoured forces carried out their own war games and exercises after 1951, where the tasks of armour varied from frontal attack to break-through and pursuit, in larger manoeuvres tanks were dispersed to infantry battalions in a fire-support role. This manner of thinking can also be seen in the first manuals where the main task of the tanks was to support infantry by creating points of penetration for mobile infantry, and to also give reconnaissance support. In the armoured forces, this manner of thinking was seen as being old-fashioned.[265]

As a result of the activity of Israeli tank officers, the role of armour as an independent formation was, however, tested in full-scale, two-sided war games held in the Negev, first in 1952 and again in 1953. In 1952 the armoured party succeeded in outflanking the defending party and disrupted the opponent's communications almost without a fight by using unoccupied areas. According to Adan, the German influence behind the Israeli concept of deploying tanks can already be seen at this time. The deep penetration of armour was Lieutenant Colonel Uri Ben-Ari's brainchild. Before and during the 1956 War he was commander of the 7th Armoured Brigade and was known for his interest in German armoured warfare during WW II. In the first exercise, the penetration was a shock to the infantry-based manoeuvre, and the armoured party was ruled out of action. In 1953, this was repeated and this time without interruption, but there were not yet any remarkable signs of a better appreciation of tanks. Nevertheless, in the armoured forces armour's principal mission was already formulated already in this phase as deep penetration into enemy territory. This also coincides with General Shomron's views of the German influence. According to him, the Israelis learned that war is an act against an enemy's psyche from the Germans; i.e., deep penetration against

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[264] Wallach: The development of Israeli Armor Doctrine, p. 12 – 13, Rothenberg, p. 87 and 99 and Luttwak & Horowitz, p. 92 – 94 and 128.

It should also be mentioned that, because of the traditions of *Haganah* and PALMACH, the IDF was already movement-oriented. However, according to Rothenberg there was also resistance to the armour doctrine because the rigid discipline, conformity, and technology required for armoured warfare ran counter to the socialist-egalitarian ideals of Israeli society.

[265] IDFArc., file 16/1529/1952, file 28/1529/1952 and file 197/488/1955.

the enemy's vulnerable rear targets was a key to success.[266] This manner of thinking can also be linked to Liddell Hart's "Strategy of Indirect Approach" and today to the principle of dislocation in manoeuvre warfare theory.

Despite the disputes over the role of tanks, in mid-December 1953 the Chief of the General Staff ordered the formation of the Armoured Corps and the abolition of the office of the Chief Armour Officer. In this arrangement the already existing armoured brigade headquarters were disbanded and their functions were entrusted to the new command. This also revealed different opinions in the ranks of the tank officers. The French-trained tank officers represented ideas about two wartime brigade combat team headquarters, which in peacetime would conduct and control battalion combat teams' exercises. These battalion combat teams would be directly under the command of the Armoured Corps and would only be transferred to the command of brigade combat teams for operations. The other school favoured the massing of tanks, organic armoured brigades of fixed composition, headed by a regular headquarters. The final solution was a compromise. The mission of the Armoured Corps Command was defined as being dual-purpose; first an inspectorate responsible for the training, doctrines and technical matters of armoured units, and second a wartime headquarters for armoured reserve brigades. According to Shai, this solution had similarities to the German system in the 1930s, when the amount of armour was still small.[267] In addition, the establishment of the Armoured Corps as one of the four functional commands – although it did not show any concrete distinguishable role for armour in comparison to the other branches at the time – was a sign of what was to come; the growing role of the armoured forces. One should remember that none of the other branches in the mid-1950s had any special role in the force structure of the IDF at the time. The branches were in the second tier under the Commands in the General Staff.

Up until the 1956 Suez Crisis, there was no common agreement on how tanks should be used in battle. According to Luttwak and Horowitz, there were three major opinions. The first was the mobile infantry school dominated by the General Staff and supported by Chiefs of Staff Yigal Yadin and later also Moshe Dayan. They both were influenced by the experience of motorised units in the War of Independence. In this concept, tanks were to support the advance of the motorised and mechanised infantry. The second was the manoeuvre school to whom tanks, used in battalion combat teams in independent striking missions, represented a cavalry-style exploitation force to be used for indirect approach behind the enemy front after an infantry breakthrough. The third school – emphasised by most tank officers including

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[266] Wallach: The development of Israeli Armor Doctrine, p. 12 – 14, Rothenberg, p. 100 – 102, Luttwak & Horowitz, p. 130, interview of Major General Avraham Adan and IDFArc., file 18/1529/1952, file 31/79/1954 and file 77/433/1956.

Ben-Ari was generally known in Israel as "Israel's Rommel".
Also interview of Professor Alon Kadish.
According to Kadish, people like Guderian, Manstein and Rommel were behind Ben-Ari's concepts.

[267] Wallach: The development of Israeli Armor Doctrine, p. 16 – 17, Luttwak & Horowitz, p. 128, discussions with Doctor, Colonel (ret.) Hanan Shai and IDFArc., file 77/433/1956.

Laskov – favoured the German-style fighting doctrine based on armoured spearheads. According to Laskov, tanks were not used effectively enough in combined operations with infantry. Therefore, armoured brigades had to be composed of self-sufficient combat teams of tanks, mechanised infantry and additional units to fan out in deep narrow thrusts and cut the enemy into isolated pockets and finally destroy him. In addition, for the armoured school, tanks already represented at this time weapons against other tanks, leading to a decision in battle. However grinding tank-to-tank battles were to be avoided so that the advance of the armoured spearheads would not be slowed. In addition according to Wallach, in the early 1950s there was also a defensive doctrine for armour; in the defence tanks were supposed to render assistance in local counter attacks, exploit these counter-attacks for the destruction of the adversary's deployment and protect exposed flanks. However, this doctrine was soon abandoned.[268]

Doctrinal disputes also influenced organisational matters. At first, when the role of armour was seen as supporting infantry, armoured detachments were – excluding some mechanised and signal units – relieved of additional forces. Nevertheless, the manoeuvres of armoured forces revealed the need for infantry support and in addition armoured engineer units and self-propelled artillery were also mentioned because tanks alone without mechanised units were seen as being too vulnerable to enemy's counter-action. At this time, after the creation of the Armoured Corps, there were also discussions on the use of mechanised infantry, whether it was to be used alongside the tanks in combined combat teams that were bigger than battalions but smaller than brigades or in independent tasks. As a derivative of these discussions, additional units of mechanised infantry, artillery – some of them even self-propelled – and engineer troops were attached to mechanised and armoured brigades before the 1956 War and armoured forces were also obliged to learn and train to co-operate with the other arms.[269]

Before the 1956 War, the organisations of the armoured and mechanised brigades – which logically were the same thing because they both consisted of

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[268] Luttwak & Horowitz, p. 131 – 132, Wallach: The development of Israeli Armor Doctrine, p. 15 – 16 and IDFArc., file 937/1034/1965.

Occasionally the disputes were so heated that armoured officers didn't even appear for the negotiations that were arranged to think about the roles of infantry and armoured forces and their co-operation.

See also IDFArc., file 3/59/1958.

Mobile defence for tanks was revitalised during the Yom Kippur War. This principle was adopted because of the needs of the situation – to compensate for the initial inferiority in strength – and was therefore not a reflection of the defensive principles of the tanks of 1950s. In March 1955 as well, the Operations Branch of the IDF General Staff outlined defensive plans for all Israeli fronts. These plans – which did not take form – also included an element of mobile anti-tank defence that stressed the importance of surprise and initiative. It might be an exaggeration to see ties between these two facts, especially since tanks were not usually included in the antitank defence. It can, however, be said that the idea of operationally using tanks defensively, though tactically offensively, has not been totally unknown to the Israelis.

[269] Wallach: The development of Israeli Armor Doctrine, p. 12 – 14, Rothenberg, p. 100 – 102, Luttwak & Horowitz, p. 130, IDFArc., file 77/433/1956, file 43/160/1959, file 266/746/1959 and file 125/516/1970.

almost an equal number of tanks – varied, however, greatly. Nevertheless, with the organisational changes these three existing brigades reached a rather balanced combination of different arms, though it is obvious that the development was also a consequence of the number of different weapons and vehicles and the lack of tanks and not only a consequence of the calculated thought to build combined arms brigades. This can be seen in the organisations of the brigades. These organisational changes made the armoured formations capable – at least in theory – of independent operational missions. In this context, the tasks of mechanised infantry were defined as follows in 1954: reconnaissance, protection of flanks, deception and also limited raids.[270]

On the eve of the 1956 Sinai Campaign, there was a reshuffle in the Armoured Corps Command staff. In a conference held on 1 September – known as *Sabbath* and later *Great Sabbath* – Prime and Defence Minister David Ben-Gurion met his commanders. The conference was especially devoted to the doctrine of armour deployment. There were two different opinions. Chief of Staff Moshe Dayan favoured the idea of mixed combat teams of infantry, armour and artillery, where infantry had the key position. To Dayan tanks were heavy, cumbersome and vulnerable weapons, having only a secondary role in support of mechanised or motorised infantry after the initial breakthrough through the enemy's lines. The main burden was laid on infantry and on light mobile elements, which would speed forwards on half-tracks. Tank officers under the command of Haim Laskov, for their part, regarded armour as a decisive weapon in ground combat, and therefore tank units should not be split up in support missions for infantry formations but be used in concentrated effort with the classic principles of armoured warfare. The pace of actions should be the pace of the armour advance, not of infantry marching, since every compromise in the speed of the action would allow the enemy to recover

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[270] Dayan (1966), 220 – 221, Gawrych (1990), p. 24 – 25 and Farris, p. 29

Before the 1956 War, the armoured and mechanised brigades were constructed in non-fixed form. The 7th Armoured Brigade consisted of two tank battalions, one mechanised infantry battalion, one motorised infantry battalion and additional units of artillery and mortar battalions and a reconnaissance company. The 27th Mechanised Brigade consisted of four tank companies, one mechanised battalion, one motorised battalion, and additional units including a self-propelled artillery unit. The 37th Mechanised Brigade consisted of one tank battalion, one separate tank company, one mechanised battalion, one motorised battalion and additional units.

See also IDFArc., file 8/804/1984.

Before the 1956 War – and also during the war itself – the 27th Mechanised Brigade, for example, was organised in combat teams consisting of one company of tanks, one company of armoured infantry, one self-propelled battery, a reconnaissance unit and a squadron of engineers. Although this organisation shows a rather balanced combination of different arms, with that number of tanks it would not have been even possible to create armoured spearheads.

and would postpone the moment of the final decision. At this phase the idea of an armoured division was also brought up, but this did not materialise.[271]

After the negotiations, Ben-Gurion reached a conclusion in the spirit of Laskov and added that the Israelis would favour the two British military theorists – Liddell Hart and Fuller in armour fighting methods. This shows that both Liddell Hart and Fuller were familiar to Israeli officers, and also to several politicians at the time. Though the range of the adoption of Liddell Hart's and Fuller's thoughts is not known, historical evidence shows the links between Ben-Gurion's conclusion and these British military theorists. A Hebrew version of Liddell Hart's *Strategy: The Indirect Approach* already existed in 1956 before the Sinai Campaign. In addition, Liddell Hart had sent a copy of Fuller's book *Lectures on F.S.R. III* with his (Liddell Hart's) notes to Lieutenant Colonel G. Rivlin, who in the early 1950s was sub-editor of the Israeli newspaper *Ma'arachot*. It is not known how much this had been used as a "manuscript" in the training of tank officers. Nevertheless, after Ben-Gurion's decision the Israelis returned without compromises to the pattern of organic brigades with permanent sub-units. In the doctrine, it was decided to deploy armour effectively and with maximum mobility in the largest possible concentrations. The principal mission was defined as the destruction of enemy forces, not the seizing of territory.[272]

The concept of massed tanks fit with the Israeli doctrine. In the ranks of tank officers, armour was already seen as a means to paralyse enemy forces with swift penetrations in depth against vulnerable targets. This also included seizing geographical objectives – for instance vital road junctions – although this aim was not in itself a decisive one to tank formations, nor in the doctrine of the IDF. The principal aim of this action was to get space for continuous operations to destroy or paralyse enemy forces. Therefore – and for the first

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[271] Oren, Mordechai: An interview of David Ben-Gurion, Al Hamishmar 8 April 1969, LH 15/5/304, part 2, Wallach: The development of Israeli Armor Doctrine, p. 17 – 18 and IDFArc., file 937/1034/1965 and 35/727/1957.

See also Liddell Hart's letter to Laskov 2 May 1969, LH 2/13 and Laskov's letter to Liddell Hart 11 May 1969, LH 2/13.
Mordechai Oren sent the article about Ben-Gurion's interview to Liddell Hart, who after that became interested in how Laskov had used his theories and therefore wrote a letter to Laskov to ask about it. Laskov answered, although he didn't reveal anything detailed. Laskov only stated that the Israelis learned a lot about Liddell Hart's thoughts and applied them in their own conditions.

[272] Liddell Hart's letter to Michael Ben-Gal 17 March 1955, LH 2/5/64/12 and Ben-Gal's letter to Liddell Hart 7 June 1956, LH 2/5/64/18.

The sub-editor of *Ma'arachot*, Lieutenant Colonel G. Rivlin, visited Liddell Hart in the early 1950s and had seen Liddell Hart's personal archive. One of the files – Fuller's book *Lectures on F.S.R. III* with Liddell Hart's notes – was of extra value to Colonel Rivlin. Later Liddell Hart sent a copy of this to Rivlin, not to be published but for his own use. Colonel Ben-Gal sent Liddell Hart, attached to his letter (7 June 1956), the Hebrew translation of *Strategy: The Indirect Approach* made by Lieutenant Colonel Elhanan Oren. The covering letter stated: "May I add that I am delighted to see this important work of yours in Hebrew".
See also IDFArc., 3/59/1958.
In March 1956 the General Staff gave orders on how to break open enemy fortifications. The main principle was to seek gaps in enemy lines while pushing through with force was secondary. This principle is similar to Liddell Hart's concept of "expanding torrent".

time in the IDF – tanks with both fire-power and ability to move under fire were regarded as a tool to destroy an adversary's forces, including reserves and armoured formations. This corresponded to the aim for decisive victory. However, because of a lack of quantity, armour was not to be used in exhausting frontal attacks against enemy masses, but according to the principles of manoeuvre warfare; with the concept of the indirect approach by keeping pace and concentrating forces against the enemy's weaknesses.

The result of the disputes concerning the role of armour was that Dayan – who favoured the idea of swift penetrations into the enemy's rear but didn't trust the technically unreliable tanks – and the General Staff opted for a blend of the mobile infantry and manoeuvre school thoughts. This was the main concept before the Suez Crisis. However inside the Armoured Corps, the opinion that armour was capable of spearheading an assault in an independent role was already adopted, and this was to have a decisive role in the coming war in the Sinai. This is also revealed in the tasks set for the mechanised infantry; they were to follow tanks where infantry was needed but the main concept was to use mechanised units to get a bridgehead for the break-through and then secure the gap for the penetration of the tanks.[273] This manner of thinking can be thought of as having been the seed that led, after the 1956 War, to the operational concept called the "Conveyor-belt" principle. This question is discussed in greater detail in chapter 8.

6.6. Paratroopers – special force/élite force

Parachute or airborne forces are today seen as one of the main elements of manoeuvre warfare, and as a fixed part of the deep battle concept. The Israelis are not an exception to this. However, the paratroopers have had more roles in Israel than similar troops in other countries. Paratroopers have not only been used in airborne operations – as a matter of fact these tasks have been the minority – but also in special missions like anti-guerrilla operations and to compensate for the lack of infantry.

When Israel purchased its WW II surplus Sherman tanks in the early 1950s, they were neither new nor in a good state of repair. This, together with disputes about the fighting doctrine was a reason for the General Staff not to hurry to accept the Establishment Team's concept of armour. Lack of trust in tanks reinforced the General Staff's belief that the paratroopers must be the spearhead of the army, not the tanks.[274]

On the modern battlefield, parachute landings are a means to swiftly engage one's own forces, to prevent the freedom of action of enemy forces and in this way to get the initiative, prevent the use of the enemy's weapon systems and in general protect the movement of one's own forces. This idea, which reflected the inclination towards the indirect approach that in today's terms can be interpreted as the principle of dislocation in manoeuvre warfare, coincided with the fresh Israeli doctrine. The emphasis on developing parachute troops

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[273] IDFArc., file 36/566/1955.

[274] Williams (1989), p. 179.

was also quite natural from the viewpoint of the heritage of the PALMACH, which had emphasised unconventional warfare more than conventional warfare. According to Kadish therefore, the initial creation of the paratroop force was, however, more out of romance than the result of a deliberate consideration that was based on a need for these kinds of troops in conventional warfare, although such plans existed. In addition, during the early 1950s' atmosphere of guerrilla infiltration the paratroopers were mostly used in counter-guerrilla tasks. Once the coming of the 1956 War became evident, the belief in having paratroop spearheads was to already surface in the initial planning of the 1956 Sinai Campaign. There were too few paratroopers to have a decisive role in the conventional warfare despite the fact that they had much more battlefield experience than the other IDF troops at that time.[275]

The first paratroop battalion was already established in 1948 from expert parachutists who were trained by the British during WW II, and from *Haganah* men who had received their jump training in Czechoslovakia. The training was implemented with principles adopted from the British. The main emphasis after the jump course was put on discipline and drilling without major battlefield exercises. Therefore, the training level of the paratroopers remained low and their equipment was poor, which also was, nevertheless, the case in the entire IDF at the time.[276]

The development of the parachute troops was originally a consequence of Palestinian guerrilla infiltration and of the counter-means adopted to respond to this threat. In the early 1950s, the infiltration gradually intensified and became more brutal. The retaliation attacks of the IDF were mostly ineffective, conscripts at that time were incapable of fighting in this type of warfare. According to van Creveld, the Israelis responded to this threat on three levels. The first was to establish new settlements on the border to deprive the infiltrators of freedom of movement. However, the net of settlements was too sparse to prevent infiltration. The second measure was the establishment of the lightly armed 5,000 man Border Police or Frontier Guard (*Mishmar Hagvul*), which, having too many tasks, was ineffective.[277]

Finally, the IDF began in 1949 to mount raids across the border into Jordan and the Sinai desert to seek revenge for past incidents and to deter future ones. Two separate units were established, a scout force, Unit 300, from volunteers to operate against Bedouin gangs, and an S.N.S.-type reconnaissance force, Unit 30, formed from conscripts for long-range patrols. Both of these units were rather short-lived experiments of the Southern

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[275] Holcomb, James F. - Turbiville, Graham H: Soviet Desant Forces. Part 2: Broadening the Desant Concept. International Defense Review, vol. 21 n:o 10/1988b, p. 1262, interview of Professor Alon Kadish and Williams (1989), p. 179.

[276] Luttwak & Horowitz, p. 108 – 109 and 111 – 112 and Brown, Ashley: Israeli Paras, Orbis Publishing, London 1986, p. 14.

Because of the many accidents in training caused by weak equipment, even the continued existence of the paratroopers was reconsidered according to Brown.

[277] Luttwak & Horowitz, p. 105 – 106, van Creveld (1998), p. 129 – 130 and Sharon, Ariel with Chanoff, David: The Warrior. The Autobiography of Ariel Sharon, Macdonald & Co Publishers Ltd, London 1989, p. 80.

Command. However, they left a seed, which later begun to develop and form a basis for territorial reconnaissance units.[278]

In August 1953, the Israelis adopted more active means to cope with the infiltration, which had become more brutal. With references to Colonel Michael Shacham, commander of the Jerusalem Brigade, Chief of Staff General Makleff established a special unit called Unit 101 under the command of Major Ariel Sharon (later Major General and Minister in the Israeli government). Unit 101 consisted of some 40 picked veterans of the War of Independence. This unit – in many ways also quite similar to Wingate's S.N.S. – was also in existence for only a short time. In any case, it was more important than the previous units because it formed a basis for the present Israeli paratroopers. In addition, the means that were used in counter-guerrilla operations were to show the direction for Israeli counter-guerrilla activities up to the latter part of the 1980s.[279]

When Moshe Dayan was promoted to Chief of Staff at the end of 1953, he wanted to combine the best qualities of the paratroopers and Unit 101 and established the 202nd Paratroop Battalion. The amalgamation begun in January 1954, but was not without difficulties. The main problem was to merge these two very different groups of men into a cohesive combat unit. While Unit 101 veterans preferred their own individual fighting style, operating as a loose bands of warriors with no distinctions between officers and men, many of the paratroopers objected to the loss of professionalism that they tend to see in Unit 101. However, mutual confidence was achieved via hard training in the first missions. Therefore, the creation of the paratroopers shows a process that

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[278] van Creveld (1998), p. 129 – 130, Katz, Samuel, M: Follow Me! A History of Israel's Military Elite, Arms & Armour Press Ltd., London 1989, p. 34 – 35 and 60 – 63.

Unit 30 was the brainchild of Moshe Dayan, who had a lot of experience in this type of action, both in the S.N.S. and in his commando battalion. A small interesting detail is that this force carried Finnish Suomi M/1931 9 mm submachine-guns.

Territorial reconnaissance units were established as follows: *Sayeret Shaked* (Almond) was already established within the Southern Command in 1949 and was made permanent in 1957, *Sayeret Egoz* (Walnut) within the Northern Command in 1955 and *Sayeret Haruv* (Carob) within the Central Command in 1966.

[279] Sharon, p. 80 and 84 – 85.

See also Sykes, p. 263 and Katz (1989), p. 33

When Orde Wingate established his special unit in Ethiopia, the unit was officially named Unit 101. However, Wingate didn't like this anonymous name and renamed it Gideon Force. The deep penetration tactics of this unit were equivalent to the tactics of the Special Night Squads. Besides, the aim was to lead picked men into battle like the biblical Gideon had done. Coincidence or not – both Makleff and Dayan were former S.N.S. men – there are certain similarities to the S.N.S.

According to Katz, the number 101 refers to the U.S. 101st Airborne Division. Major Yehuda Harari, the commander of the original paratroop battalion (*Yechidat Hatzanhanim*), envisaged, according to Katz, the creation of IDF paratroopers on the U.S. models of the 82nd and 101st Airborne divisions. In any case, Unit 101 was established before reorganisation of the paratroopers began.

went on in the IDF on the whole, when the characteristics of the British and PALMACH-trained personnel were combined.[280]

The training of the paratroop battalion was like a copy of the training activities of the S.N.S. General Sharon speaks at length of this evolution in his book *Warrior*. Some points are worthy of a more detailed examination. The first is the thorough planning process before operations and the principle of post-action reporting. In a way the former deviated from the fighting principles of the ground forces because their tasks on the fluid battlefield could not be defined precisely and therefore flexibility in implementing the task took first priority. Second is the battle technique. Sharon replaced the old "fire and movement" tactics learned from the British where each team provided fire support for the others when troops were advancing towards the enemy lines by stages. The new tactics – like the operational doctrine of the IDF on the whole – also shows certain similarities to indirect means. It was based on Sharon's experiences with the fears of the Arabs; fear of the dark and a fear of hand-to-hand combat. To take advantage of these weaknesses, the paratroopers trained to avoid fire-fights until they were in touch with the enemy. They were taught to demoralise the enemy and play on his fears by moving close to the enemy in silence. Once they reached the trench line, the men were to form small assault groups and, without pausing to clear the fire-trenches, they were to jump into the communication trenches, running and shooting all the way to the centre and out again. The essence of Sharon's tactics, described by Luttwak and Horowitz, was the shock effect of relentless movement – partly from the rear – and surprise to confuse the enemy and break down his resistance. Nevertheless, the paratrooper assault method also included some weaknesses; the most important of them was the possibility of being ambushed before the action had begun. The second was a vulnerability to enemy counter-attacks during the actual assault. After studying several ambush cases, the paratroopers concluded that the most effective response to this type of threat was to attack immediately. Therefore, the paratroopers were trained to act reflexively in danger. [281]

Because of the mainly positive performance of the paratroopers in their counter-guerrilla operations, Chief of Staff Dayan wanted to incorporate the paratrooper model into the regular army. According to Luttwak and Horowitz, Dayan wanted to raise the training level of the army with training that stressed combat skills rather than parade-ground drills, and to increase toughness,

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[280] Luttwak & Horowitz, p. 108 – 109 and 111, Ne'eman, Yuval: This War of Our Resolution, p. 3 and Rothenberg, p. 93.

See also Sharon, p. 94.
Sharon describes the training process in detail, but does not assign any special value to the principles adopted from the paratroopers.

[281] Luttwak & Horowitz, p. 113 – 114 and Sharon, p. 95 – 96 and 98 – 99.

See also Rothenberg (1979), p. 93.
According to Rothenberg, artillery support was usually dropped because of the fear of civilian casualties.
The paratroopers were also prisoners of their fighting doctrine. This was revealed; for example, in Mitla Pass in the 1956 War, when the paratroopers raided Egyptian positions without proper intelligence, which caused a rather high number of casualties. See for example Sharon, p. 148.

courage and self-confidence in the combat leaders. Therefore, he also wanted a maximum of "teeth" units with an absolute minimum of "tail" – and in all those matters the paratroopers provided an exemplary model. Up until the Suez Crisis, many of these plans were absorbed in the IDF, including the commanders' nose heavy "follow me" leadership principles and the evacuation of all "killed in action", both of which were important to fighting spirit. According to Dayan, before the Suez Crisis Israeli officers were already well-trained, young and in good shape, and they were daring and rapidly made decisions.[282]

1955 and 1956 were years of guerrilla raids and retaliation. After a raid against a guerrilla base in the village of Kibbiya in Jordan, the Israelis begun to concentrate their reprisal raids against military camps, police fortresses and outposts not only in Jordan, but also in Egypt and Syria. This change was a consequence of the high rate of civilian casualties in the Kibbiya operation. Meanwhile the size of the operations increased and diversified to combined arms operations. In this way the paratroopers also became more familiar with the co-operation of arms other than infantry and armoured units. The first real combined arms operation was *Alei Zait* (Olive Leaves) against the Syrians east of Lake Tiberias on the night of 11/12 December 1955. This force was composed of all services and commanded by Sharon. It was based on carefully detailed planning. Nevertheless, the operational principles also fell into a pattern. The turning point was an attack against a Jordanian police fortress near the border town of Kalkilya on the night of 10 October 1956. This operation revealed the shortcomings of the night reprisal raids; the enemies had become familiar with Israeli tactics and were already able to anticipate Israeli moves. The benefits were slight comparing to the price, in Kalkilya's case the casualty toll was especially high. After the 1956 War, the Israelis then gradually – with some exceptions – returned to emphasising well-trained special troops in their counter-guerrilla missions, because guerrillas generally used towns and villages as their bases, shielding themselves behind the civilian population. Thus, the use of mass and firepower was not possible. Nor were the combined arms principles adopted by the other units and formations of the IDF to any great degree.[283]

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[282] Luttwak & Horowitz, p. 117, Dayan (1966), p. 40, Sharon, p. 92 and Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 14.

Sharon states that already in the early stages of Unit 101 he thought that his unit might be an example for the rest of the army. Whether this had any connection to Dayan's ideas remains unclear. At the very beginning, after the establishment of Unit 101 Dayan didn't favour its role – maybe because of its elitist status and maybe also because of its initial failures in operations – but he changed his mind after getting the post of Chief of Staff.

[283] Sharon, p. 98 and 136 – 137, Luttwak & Horowitz, p. 139 - 140 and Rothenberg, p. 94.

For Sharon the failure at Kalkilya was also a learning experience. Ever since then no common scheme can be seen in Sharon's operations, they all have been very unique. However, the overall tactical principles of the paratroopers proved to be sound and were also applied later by Sharon.

In his book *Warrior,* Sharon criticised the role of Dayan and the General Staff in the Kalkilya operation. Sharon had also planned a blocking force to contain the Jordanian counter-attack, but Dayan did not accept it, although he was not very well acquainted with the battlefield situation. By doing so, Dayan restricted Sharon's operational planning, which was against the delegated command principle. This process was quite similar to the so-called

The tactics developed by Sharon was strikingly similar to the principles of manoeuvre warfare. This shows that effective counter-guerrilla means – like guerrilla tactics – can also be based on the use of an opponent's weaknesses. First of all Sharon favoured offensive action to maintain initiative and momentum, by surprise if possible. The traits of psychological warfare and indirect strategy – inherited and revived from PALMACH and the veterans of the War of Independence – to benefit from the enemy's weaknesses were also central. In addition, more than before, the operations were based on precise intelligence data to favour the least expected lines. The latter point was also linked to operational planning when Dayan formed special scouting detachments to collect topographic intelligence material, and by 1956 the Israelis knew, according to Luttwak and Horowitz, Sinai better than the Egyptians.[284]

On the whole, the first years of the paratrooper battalion in the early 1950s were full of action, but at the same time these activities had very little to do with conventional warfare and with the common concepts of the use of paratroopers as a spearhead for an army. This was also the case with reserve paratroop forces. They were trained to seal the borders in peace-time low intensity conflict operations as well. However, unlike most units in the other branches – the paratroopers already had fighting experience when the 1956 War broke out. In theory, this gave the Israelis a possibility to use the paratroopers as a spearhead in a conventional offensive, just as the General Staff has planned in the beginning of the 1950s. In practise, nevertheless, the paratroopers did not have experience in large multi-battalion landing operations in conventional warfare. The Air Force also did not have the ability to transport and replenish such a large landing force. In addition, until the 1956 War, the 202nd Paratroop Battalion did not have the status of an independent contingent. It lacked auxiliary units, intelligence troops and support forces. It was expanded to a brigade just a short time before the war.[285]

The era of retaliation attacks also modified the future Israeli strategy. Raids against Arab objectives decreased the activities of the Palestinian guerrillas and their supporters and the operations were therefore seen as successful in Israel. According to Zeev Schiff, the foundation of retaliation attacks was built on the fear barrier. The philosophy of this was based on two assumptions:

"Reversed Optional Control principle" during the Yom Kippur War, where higher echelons supervised operations without a proper picture of the situation.
See also Dayan (1966), p. 10 and 52 and Bar-Siman-Tov, Yaacov: Israel, the Superpowers and the War in the Middle East, Praeger Publishers, New York 1987, p. 28 and 35.
According to Dayan, the restrictions on the Kalkilya operation were made because of a fear of escalation. The British and Iraqis threatened to intervene on the battlefield if large-scale operations were continued. Besides, negotiations with the French over the situation in the Sinai were already in progress, and there were no reason to make the British angry because they were also involved in the Suez Crisis.

[284] Luttwak & Horowitz, p. 118.

[285] Sharon, p. 124, interview of Professor Alon Kadish and IDFArc., file 103/798/1960.
For example, the inexperience in brigade-size operations caused some logistical confusion during the 1956 War. Some equipment that was needed was absent – one reason for this was the hurriedly delivered material that was purchased just before the war – and some of what was not needed, was delivered.

First, the Arabs only understood and respected the language of force. Second, if the Arabs used violence against Israel, ordinary punishment was insufficient. A double or triple price had to be exacted. Only then would Arabs be compelled to reconsider the desirability of actions against Israel and its citizens. This can be seen as one of the thoughts that lead gradually to the deterrence strategy in the latter part of the 1950s and in the 1960s, to the denial approach; first within a low intensity conflict and later within the whole IDF and in the context of an all-out war. Moshe Dayan was one of the fathers of this philosophy. Dayan's emphasis can be seen in his words: "It is not in our hands to guarantee each water line against sabotage, each tree against uprooting. It is not in our hands to prevent the murder of workers in the fields and families in their sleep. But it is in our hands to fix a high price for our blood, so high that the Arab community and the Arab military forces will not be willing to pay it." It was also accepted that retaliation perhaps retarded the peace process, but security came before peace. According to Lanir, a war avoided was a war prevented. The enemy had therefore to be deterred, and the best deterrence was decisive victory in battle. Total victory in the war would deter the enemy from starting a new war in the future.[286]

6.7. The Air Force and Navy

During the first part of the 1950s, the Israeli Navy came into being. Operationally its importance was still seen as being minor, which was a consequence of the nature of the imminent naval threat; it was slight. According to the short war concept, a sea embargo was not very harmful. Therefore, Israeli naval units were realistically tailored for their tactical mission of protecting the Israeli coastline, and with the growth of the force – two British Z-class destroyers, twelve torpedo boats, and several small frigates and patrol ships, coastal escorts and a few landing craft – the Navy was seen as being able to cope with the threat to the coastal areas. However, the Navy was to apply the same doctrinal principles as the other services; active offensive tactics and often at night.[287]

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[286] Sharon, p. 96, 120 and 136 – 137, Lanir, p. 24 and Schiff, October Earthquake, p. 75 – 76.

Sharon shared Dayan's views. According to him, the objective of the retaliation attacks was "to create in the Arabs a psychology of defeat, to beat them every time and to beat them so decisively that they would develop the conviction they could never win, to destroy their will to fight"...."With Kalkilya it became crystal clear that no deterrence operation, no matter how large or successful, would achieve the goal of stopping terrorism. If we wanted the Arab governments to face their responsibility, another route had to be found." The question was did this mean an all-out war or the use of diplomacy, which at the time was almost out of the question. If this meant war, this statement reinforces Professor Handel's statement on page xxvii; deterrence; i.e., war at the operational level (army) was thought through thoroughly, but not at the strategic level (state).
See also van Creveld (1998), p. 130.
Van Creveld calls the deterrence strategy in counter-terrorism by the name of "indirect deterrence".

[287] Fall, p. 10 and Dupuy (1992), p. 209.

The case of the Air Force was different. Up until the 1956 War, the Air Force was to become a remarkable force within the IDF, although not without disputes. During his tenure as Chief of Staff, Yigal Yadin continued to reduce the importance of the IAF. This lead to the resignation of the first Air Force Commander, Major General Aharon Remez, who favoured a more independent role for the IAF. At the end of 1950, Major General Shlomoh Shamir was nominated to be commander-in-chief of the Air Force to turn the IAF headquarters into part of the General Staff to be – no longer an autonomous command – but a support service for the ground forces. Because of his ill health, the work remained unfinished and, according to Cohen, his only real accomplishment was the transfer of IAF headquarters from scattered offices in Jaffa to Ramle, near Tel Aviv, where it became a military command post.[288]

In August 1951, Major General Shamir was replaced by Major General Haim Laskov, who was expected to complete the integration of the IAF into the General Staff. Laskov, who had been in charge of the doctrinal Establishment Team, can be seen as the builder of the IAF's organisation. He shared General Remez' views on the need for air power independent of ground considerations. Laskov was a visionary soldier who already had suggested mobile armoured units supported by air power. He also had a vision of what the Air Force should be in the future. During his two-year period in the Air Force, he supervised a thorough analysis of the role of air power in Israeli strategy, and developed the beginnings of a tactical doctrine with his deputy and successor Colonel (later Major General) Dan Tolkowsky.[289]

In April 1952, Chief of Staff Yadin gave an order to guide the development of the Air Force. This order shows that some mutual understanding between the General Staff and the Air Force was reached. The tasks of the IAF were defined as follows: 1) Defence of Israel's airspace, 2) Destroying the enemy air force, 3) Hitting the military force of the enemy in combination with ground and naval actions and 4) Support tasks, including close-air-support. At this time – when the IAF still had WW II surplus long-range bombers – the strategic tasks of bombing enemy infrastructure and war potential were also considered.[290]

According to the General Staff's order, in the doctrinal framework the objectives of the development of the Air Force were easily defined. Dan Tolkowsky held a central position. Under his leadership, according to Luttwak and Horowitz, the IAF acquired many of the distinctive features that still remain with it today. However, it was not until the tenure of Ezer Weizman, who succeeded Tolkowsky in 1958, that the Air Force achieved the form that Tolkowsky emphasised. According to Cohen, Tolkowsky's aim was to create a force that could neutralise the air forces of the enemy at the instant of any hostile action. Israel's lack of strategic depth necessitated constant readiness and a fast response with a regular force that did not depend on reserves.

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[288] Cohen, p. 4 and 68 – 69 and Williams (1989), p. 94.

Remez was a former RAF pilot while Shamir was an infantryman who had reached the rank of Major in the British Army during WW II.

[289] Rothenberg, p. 78, Williams (1989), p. 97 and Luttwak & Horowitz, p. 122 – 123.

[290] IDFArc., file 120/626/1957.

Because of this fact, Tolkowsky gave the fight for air superiority against enemy air power top priority and only after that came tactical strikes and reconnaissance in support of land and naval operations. Egypt was then seen as the main enemy, and the ever prevailing quantitative inferiority was to be dealt with by attaining aerial supremacy by destroying the Egyptian Air Force on the ground at the beginning of a war.[291]

However, there were different opinions on how the enemy air force was best destroyed; whether in aerial combat or in attacks on enemy airfields. Finally for economic reasons, multi-purpose aircraft, which could be used for attack, but also for defence, were seen as the best choice for implementing this aim. Tolkowsky also realised that the strength of an air force depended on the number of serviceable aircraft available at any time, rather than on the total number of aircraft in the inventory. This was the foundation for building a ground system that later was to be able to keep the number of operational planes very high and the turn-around times very low. During Weizman's time as commander-in-chief, this system was implemented. Every possible mechanical and psychological technique was used to improve the work of the ground crews so as to reduce the time required for maintenance between sorties. This also shows that Israel had already in 1956 thought through the practical matters of a pre-emptive strike. In addition, the concept of a pre-emptive strike against enemy airfields was in accordance with the doctrinal principle of transferring the battle to enemy territory. In the General Staff before the 1956 Sinai Campaign, however, the IAF was seen as being too small to carry out this mission, though theoretically it might well have been possible. In addition, Laskov and Tolkowsky planned aerial control networks in order to track enemy aircraft so that real-time changes in the on-going missions of IAF planes could be made.[292]

Finally, Laskov and Tolkowsky created a three-year plan according to the missions that the General Staff had them given. The tasks of the IAF were defined as follows: 1) Defence of the nation's skies, 2) The disabling of the Arab air forces and 3) Transport and attack support for the ground and sea forces. These tasks and priorities were in accordance with the operational doctrine, as well as with most of the tasks given by the General Staff, but not with the role of the Air Force in the General Staff. When the Air Force, like the Navy and Armoured Corps, had gained the status of a Command in the General Staff, the aim had been to form a joint operational command echelon. The new tasks of the IAF also had, however, strategic and tactical dimensions that increased the role of the Air Force. This was not monitored closely by the

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[291] Cohen, p. 61, 72 and 81 – 82, Williams (1989), p. 94, Luttwak & Horowitz, p. 122 – 123 and Rothenberg, p. 103.

Major General Ezer Weizman, a former fighter pilot in the RAF during WW II and later President of Israel, was one of the opponents of the multi-purpose aircraft at first. He also preferred the defence of nation's skies to pre-emption at first, possibly a consequence of his experiences in the Battle of Britain. During his tenure he changed his opinion.

[292] Cohen, p. 81 – 82.

Before the 1956 Suez Crisis during Moshe Dayan's tenure as Chief of Staff, the main emphasis of the IDF was on developing means to stop terrorist infiltrations into Israel. This also meant that the economic focus was on this objective.

General Staff which was to cause disputes that remained unresolved until the latter part of the 1950s when Major General Weizman became the commander-in-chief of the Air Force.[293]

Despite the financial disputes between the General Staff and the IAF headquarters, the IAF was converted from a propeller to a jet air force during the first years of the 1950s. In June 1953, the first jet fighter, a British-made *Meteor*, landed in Israel, though the squadron was not operational until 1955. The growth and quality of Arab air power, however, accelerated the procurement policy. In early 1954, the IDF intelligence network estimated that Arab air power would include 360 fighter aircraft, one-third of them jets. This potential threat made mutual understanding in procurement programs possible, and planning to produce a response to the tangible threat was started. This process partly bore fruit already before the 1956 War, when France agreed to sell Israel *Mystère IV* aeroplanes. In addition to their intercept capabilities, these planes could serve as bombers as well. In the wake of the Suez Crisis, the IAF had some 150 combat aircraft of which, however, only three squadrons – 70 planes – were jets.[294]

Alongside the training of pilots and ground crews for the new jets, the IAF was developing the means, tactics and intelligence to meet the new threats. The goal of the squadrons was – as was earlier already planned – to fly the greatest number of sorties with the smallest number of aircraft, which was based on the efficiency of the ground crews and installations. Target priorities were set as enemy aircraft first, then airfield runways and installations. The classification of targets became possible when a photographic wing was established in late 1953.[295]

The result of the development process of the IAF in the early 1950s was that the IAF commanders had adopted a policy of a pre-emptive air strike. When intelligence became able to produce accurate target data, the IAF staff developed operation order "*Slope*". This plan was connected to a broader plan for the opening of the Strait of Tiran, where the IAF's role was to be ready to attack the Egyptian airfields to assure air superiority and an umbrella for itself and the ground forces, as well as to prevent the bombing of cities in Israel. In the event of war, every flightworthy aircraft – with a few exceptions to protect Israeli airspace – would be assigned to simultaneous surprise attacks on Egyptian airfields to destroy aircraft, runways and ground installations.

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[293] Ibid., p. 70 – 72, Williams (1989), p. 97 and IDFArc., file 126/632/1956 and file 118/697/1958.

The main doctrinal principles of the IAF; the short war concept, defence of Israel's skies, destruction of enemy air power, ground support, deception and the pursuit of qualitative superiority were already present in the Air Force's "*Barad 1*" plan, which was drawn up in spring 1953. These principles were to remain without major changes.

[294] Cohen, p. 84, 89 – 90, Dupuy (1992), p. 212 and Luttwak & Horowitz, p. 125.

The purchase program before the Suez crisis was so fast that one squadron of *Mystère*s was unmanned because of a lack of pilots trained to fly jets.

[295] Williams (1989), p. 103, Cohen, p. 84 and 87 – 88.

According to Cohen, the intelligence wing was established after one *Mosquito* crew flew over Alexandria and photographed it without the permission of their superiors in September 1953. The results were good and led to a nine-month "pregnancy" for the photographic wing.

Therefore, from early 1956 the IAF was also involved in a methodical series of technical exercises in dummy raids on IAF bases.[296]

Co-ordination between the IAF staff and the General Staff was not on fixed lines. This was revealed when the Israelis started their planning process for a possible war. The Israelis had two plans for the war in the Sinai, "*Kaddesh 1*" for a war in the Sinai and "*Kaddesh 2*" for a multi-front war. In both cases, the task of the IAF would have been a pre-emptive air strike. This mission of the IAF was well known in the General Staff, too well, one might say. Completely devoted to the initial air strike, the IAF had not put much emphasis on the other two missions of the Air Force; the defence of the nation's skies and ground support for ground forces. In the updated "*Kaddesh*" plan, however, the IAF was only given defensive and ground support tasks; close support of the ground forces, interdiction strikes against enemy reserves and rear targets and battlefield air cover and transportation missions.[297] The main emphasis was put on the goal of destroying the enemy on his way to the battlefield. The pre-emptive air strike was to be implemented only if the Egyptians were the first to escalate by attacking targets in Israel proper.[298]

According to Cohen, the change in the role of the IAF left the Air Force only three days to accomplish its preparations for the new missions. Many pilots completely lacked experience in providing ground support. Dog-fights and ground-target attacks were trained for hastily, but anxiety and frustration was avoided because the pilots didn't know the extent of operation "*Kaddesh*". Air Force officers with their own communications were also to be assigned to all echelons from battalions upwards, while ground forces liaison officers were attached to the squadrons. However, exercises drew attention to the failings in the system – some of which were related, according to Williams, to the ever-present "fog of war". In addition, the number and quality of the missions requested and the inadequate technical and tactical skills of the air operation controllers were not in balance. Even today close air support missions without

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[296] Cohen, p. 94 and 100 and Williams (1989), p. 103.

[297] Brunhaver, Steven, Lemaster, Richard, Moreno, Juan, DeSerisy, Lloyd, Lutes, Charles and Salcedo, Maurice: USAF Aerospace Doctrine: Enhancing the Air Campaign Planning Tool (ACPT), Air Command and Staff College, May 1995, p. 6 and Cordesman, Anthony H. and Wagner, Abraham R: The Lessons of Modern War, Volume I: The Arab-Israeli Conflicts, 1973 – 1989, Westview Press, Boulder and San Francisco 1990, p. 90 and 97.

According to Brunhaver etc., at the time the Israelis didn't divide close-air-support and air-interdiction into different categories of flight missions. Nevertheless, the difference in the terms was already understood during the Sinai Campaign; ground support consisted of aerial strikes on different kinds of targets in the deep battle area – having direct of delayed effect on the battles of ground forces. It was only after the Yom Kippur War that interdiction and close-air-support were clearly separated in the IAF's doctrine. In addition, according to Cordesman and Wagner, the IAF has traditionally connected interdiction to pre-emptive air-strikes. As a consequence of all these factors, before the IDF's operation "*Peace for Galilee*" in Lebanon in 1982, it is not possible to divide the statistics for different kinds of flight missions into the three categories of air defence tasks, interdiction and close-air-support. One can only divide the tasks into air defence sorties and ground support.

[298] Cohen, p. 101 – 105, Luttwak & Horowitz, p. 126 and 153 – 154 and Rothenberg, p. 114. *Kaddesh* is the first chapter of the text read at Passover, telling the story of the exodus from Egypt.

real-time communications makes these missions very difficult to implement. Therefore, Tolkowsky stressed the role of interdiction, where the Air Force's freedom of action in the enemy's depth would be greater. On the basis of this line, the Air Force headquarters devoted itself to independent interdiction missions against enemy forces behind the battlefield; to disrupt the flow of reinforcements and supply intelligence on forthcoming intentions. This course of action, which shows that the joint chain of command in the IDF General Staff was still evolving, had striking similarities to those of Rommel's Africa Corps and Montgomery's 8th Army in WW II, where air components had independent roles. Therefore, in the 1956 Suez Crisis it is not possible to speak of planned lightning warfare composed of armoured spearheads supported by an air force component.[299]

In conclusion, while the IDF General Staff and Israeli political leaders – mainly Prime and Defence Minister Ben-Gurion – didn't share the view of the Air Force's capabilities of attaining air superiority, it is even doubtful that the IAF really would have had the potential to launch an all-out initiative air strike on the Egyptian air fields with so few jet planes. Partly the awareness of the Franco-British alliance in the coming war might have had an influence on this decision, because the role of the allied air force component was to acquire air superiority. In any case, combining these things together, the supreme command's hesitation was obviously the final reason for halting the primary plans of the Air Force at this time. Despite the Sèvres agreement, the Israelis did not fully trust their allies, especially the British. The possibility of fighting the war alone was still there. Therefore, risks in the use of force – including the use of the Air Force – had to be reduced to a minimum.[300]

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[299] Cohen, p. 104 – 105, Williams (1989), p. 103 – 104 and Cooling, Benjamin, Franklin: Close Air Support, Office of Air Force History, U.S.A.F, U.S. Government Printing Office, Microfilm copy, Washington D.C. 1990, p. 492.

Lightning warfare was originally Liddell Hart's term. The German *Blitzkrieg* is equated with this. In general, lightning warfare is understood as an offensive of combined mechanised forces and air force components.

See also Bagnall, p. 214 – 215, Hamilton, p. 670 and IDFArc., file 138/172/1959.

In Rommel's Africa Corps the *Luftwaffe* was not a subordinate force while the British Desert Air Force was not subordinated to the 8th Army. As a result, both armies used fighter and ground strafing groups more in a strategic role than tactically in support of the ground forces.

It is, however, obvious that ground support was not totally unknown to the IAF. For example, the Air Force joined in the exercises of the 27th Mechanised Brigade in spring where the task of the IAF was to give ground support.

[300] Gawrych, p. 19 – 21, Williams (1989), p. 104 and Luttwak & Horowitz, p. 125.

See also Gawrych (1990), p. 19 – 21 and Rothenberg, p. 104.

The secret Sèvres Agreement, which was made between Israel, France and Britain from 22 to 24 October 1956, required Israel to make the first move in the form of a paradrop at Mitla Pass deep in Egyptian territory. This action would have given Britain and France a *casus belli* to demand both Egyptian and Israeli withdrawal from the Suez Canal zone. Egypt was not expected to agree, which would have been a reason for Anglo-French intervention to prevent a possible war between Israel and Egypt and to keep the Canal Zone under international supervision. In this framework, Israel was given freedom to realise its goals in the Sinai.

6.8. Planning and exercises

In 1955, the Planning Branch of the IDF General Staff evaluated Israel's future scenarios. In this document, signed by Colonel Yuval Ne'eman, three possibilities were seen; the first was an Egyptian attack, second came a Third World War in which Israel would also be involved and third was a pre-emptive strike of another Arab country in a range of some 500 kilometres from Israel. This all meant that Israel had to take a risk because preparations for all scenarios were not possible. As a consequence of this, Egypt was seen as the most probable threat. The main aim was to split the Egyptian efforts and break their spirit. The principle of transferring battle to enemy soil can also be seen. Territorial defence was responsible for the defence of the settlements and border villages, for delaying the enemy and for keeping several important areas as a base for a counter offensive. However, the counter-offensive was the major effort. Six brigades, including three armoured, were to break through the Egyptian lines in the central and northern Sinai. The armoured formations, which were to be kept in reserve at first, were to use the success in the Egyptian rear. In all this, special importance was put on indirect fighting and mobile operations, which both are stressed several times in the document. In addition, the tasks of the Air Force were defined; first defence of the skies and after that support of the ground forces.[301]

The evaluation of the Planning Branch also contains the idea that the IDF had to be able to implement seven to eight division-level operations, but because such echelons did not exist, the aim was to be achieved with a similar number of brigades.[302] This shows that the role of the *Ugdah*s, which were also mentioned in this document as a command echelon between brigades and the territorial commands, was not thoroughly considered. While in theory *Ugdah*s were operational echelons, their main function was limited to transmitting orders from the General Staff to the brigades. In addition, in a way, the role of the territorial commands also shows the incompleteness of the IDF's command structure. Although the commands were responsible for their territories, including from the operational point of view, in practise their role was limited to the allocation of reserves. Operations were to be supervised by the General Staff.

According to Rothenberg, IDF doctrine already contained the idea of an initial air strike, but only when assured of major-power support. In the 1956 War, this support was available, but the principle was not applied. This also shows the Israelis' lack of trust in their allies.

[301] IDFArc., file 36/566/1955 and file 4/59/1958.

In April 1955, six of the IDF brigades were trained and equipped for this plan.
Possible changes in the circumstances was also considered. Planning was limited to a maximum to five years in the future.
The layout of the document, including the filing marks, and the manner in which issues are organised show that the staff procedures were adopted from the British.
See also IDFArc., file 65/346/1957.
In early 1954, the territorial defence still consisted of separate battalions, settlements and civil defence. In order to standardise the territorial defence and maximise the number of combat troops, territorial forces were to be formed in brigades up to the end of 1956. These brigades also had artillery.

[302] IDFArc., file 36/566/1955.

According to Doctor Shai, despite rather intensive development, the IDF was not in harmony before the 1956 War. There were several reasons for this. First, early 1956 had been a period of low intensity conflict operations. Rather few forces were, however, committed to counter-guerrilla action and although manoeuvres were held, commanders grew separated from the reality of war. Instead, they concentrated on garrison routines; training and planning. Second, according to this the commanders seldom had the possibility of practising their leadership skills and making decisions that later on formed the basis for the work of their staffs. Although the leadership process during a battle is difficult to train for in peacetime, and Shai also admits this, management was not trained for enough before the 1956 War. Therefore, if there was not a proper balance in the IDF between the physical command structure and the tasks of the formations, the commanders and their staffs did not have sufficient practise in understanding and supporting each other.[303]

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[303] Discussions with Doctor, Colonel (ret.) Hanan Shai.

See also Dayan (1966), p. 40.

The training process during Dayan's tenure as Chief of Staff also lead to command changes; incapable officers were transferred to other posts before the 1956 War, which was an unpleasant but very necessary job according to Dayan.

7. THE 1956 SINAI CAMPAIGN

The 1956 Sinai Campaign was an exceptional war from the Israeli point of view because many of the opening moves in the political arena were secretly planned with the British and the French in Sèvres in France just before the operation on 22 – 24 October.[304] On the whole, the situation that developed in the Suez Canal was seen in Israel as providing an opportunity to solve the stalemate in the political negotiations. The crisis enabled a stop in the sea embargo in the Suez Canal and in the Red Sea, as well as an attempt to crush the *Fedayeen* guerrilla bases in the Sinai. Yigal Allon and Robert Jackson both also write about Israeli confidence in contriving the war itself. According to Allon, the Israelis would – because of the intolerable situation in the Sinai – have initiated the war anyway even in the absence of a favourable situation. According to Jackson, Moshe Dayan left the impression in the negotiations with the French that Israel was able to quickly cope with the enemy even without allies.[305]

In the 1956 Sinai Campaign, Israel fought its first modern war, though by today's standards the war was relatively primitive from an equipment and operational point of view. In addition, Israel's military doctrine was not yet in balance with the quality of its forces in the early 1950s. The infantry-oriented IDF did not fully appreciate the potential of armoured warfare, although the Israelis already began to understand the value of mobility on the battlefield during the war. Therefore, according to van Creveld despite Israeli operational victory, some Israeli formations performed well, some less so and some too much less so.[306] At the strategic level, the war was a disappointment to the Israelis; despite the decisive victory on the battlefield, the IDF was compelled to withdraw from the occupied areas in the political arena. This inability to benefit from territorial conquest combined with military success led to a growing trust in a strategy of deterrence and the denial approach after the war.

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[304] The term Sinai Campaign separates the Israeli "Operation *Kaddesh*" in 1956 from the Suez Crisis, which was also political, long-term and did not include Israel in the early phases.

[305] Bar-Siman-Tov, Yaacov: Israel, the Superpowers and the War in the Middle East, Praeger Publishers, New York 1987, p. 30 and O'Ballance, Edgar: The Sinai Campaign 1956, Faber and Faber, London 1959, p. 79, Jackson, Robert: Suez - The Forgotten Invasion, Airlife Publishing Ltd., Shrewsbury England 1996, p. 36 and Allon (1970), p. 56.

For more on the Israeli-Anglo-French planning process, see, for example, Bar-Siman-Tov (1987), p. 33 – 35 and 38 – 41, Gawrych (1990), 19 – 21 and Jackson, p. and 39 – 40. *Fedayeen* (dedicated to Allah) was the name of the Palestinian guerrillas at the time.

[306] Gabriel, Richard A: Operation Peace for Galilee. The Israeli-PLO War in Lebanon, Hill and Wang, New York 1984, p. 17, Handel, p. 550 and 563 and van Creveld (1985), p. 197.

7.1. Deployments and plans

The Egyptian forces in the Sinai were not in a position to withstand a determined Israeli attack. Strung out over the vast desert, the bulk of their forces were bottled up in the northernmost corner of the peninsula, formed up very close to the Israeli border. The Egyptians had not implemented the suggestions of their German advisers. They had proposed that Egypt's main defence line should be sited in the depths of the Sinai on the hills that run north to south in the Bir Gifgafa area controlling the major east-west axes and the important Mitla and Giddi passes. Nevertheless, based on a thorough study of all avenues of approach, the Egyptian defences were designed to block the roads, and the fortifications were good. In addition, the deployment obviously reflected Egyptian President Gamal Abdel Nasser's will. According to Rothenberg, he wanted the main positions and bases as close as possible to the Israeli frontier to serve as a springboard for a future offensive and to defend the *Fedayeen* camps in the Gaza Strip.[307]

The Egyptian deployment was very vulnerable and practically invited encirclement. Indeed, the Egyptian disposition in the Sinai favoured Israeli deep penetration tactics. This is clearly revealed in Moshe Dayan's analysis of the Egyptian preparations in the Sinai as cited by Brigadier Bagnall. According to Dayan, the Egyptians had exaggerated the defensive power of defended localities by making a false analogy with Europe. This analogy supported a belief that it was possible to block and prevent the movement of sizable forces into the Sinai by holding key salients. However, the insufficient manpower and weapons in the positions in the Negev and the northern half of the Sinai were quite easily bypassed. Nevertheless, the defence might also have been a success if the Egyptians had been prepared to use mobile reserves. This was not the case. The Egyptians were unable to conduct mobile warfare.[308]

At the strategic level, the Israeli war aim was, according to Zvi Lanir, to exploit the opportunity to expand its borders. With this objective in mind, Prime and Defence Minister David Ben-Gurion modified the goals of the IDF. They were as follows:

1) The destruction of the forces that were continuously attempting to subdue the Israelis.
2) The liberation of that part of Israel's homeland that was occupied by the invader.

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[307] Fall, p. 9, Rothenberg, p. 98, van Creveld (1998), p. 142, Soffler, Arnon: The Wars of Israel in Sinai: Topography Conquered, Military Review, 4/1982, p. 62 – 63 and 69 and a letter from Colonel Michael Ben-Gal to Liddell Hart 8 November 1956, LH 2/5/64/24.

After the war, there were statements that the size of the materiel dumps captured by the Israelis in the Sinai were proof of aggressive Egyptian intentions against Israel. This can be seen in Colonel Michael Ben-Gal's letter to Liddell Hart, where the writer speaks of rather offensively extended Egyptian concentrations in the northern part of the Sinai. However, when the reduction of Egyptian troops in the Sinai in the early 1950s is taking into account, it is highly unlikely that in reality Egypt had an offensive capability against Israel at that time.

[308] Bagnall, p. 34 – 35, Fall, p. 6 and Rothenberg, p. 98.

3) Insuring freedom of shipping in the Straits of Elath (Eilat) and in the Suez Canal.

In addition, Moshe Dayan, the Chief of Staff of the IDF, had the objective of capturing as much Egyptian equipment as possible, but not to kill enemy soldiers; i.e., to destroy the war potential of the Egyptian army.[309]

After the opening moves in the operational plan – the parachute drop in the Mitla Pass and the set-piece commitments on the border line – Israel's aim was to break through the enemy lines under the cover of darkness in the northern and central Sinai along two roads with two *Ugdah*s. In phase two in the first light, depending on the success of the night attack, armoured brigades would break deep into enemy lines while infantry formations would deploy in defence in the central Sinai. In the plan, the Suez Canal is also mentioned as a possible final aim of the penetration. In addition, one brigade was reserved to conquer the southern tip of the Sinai Peninsula and one brigade to seize the Gaza Strip.[310]

The force ratio favoured the Israelis, although not by much. After the nationalisation of the Suez Canal, the threat of British and French invasion of the Egyptian homeland had forced the Egyptians to reduce their troops in the Sinai to half of their normal strength. This resulted in the defensive deployments being rather thinly manned. Besides, the Israelis could also include something of the role of the Anglo–French invasion in their calculations. On the whole, the Egyptian forces in the Sinai consisted of two infantry divisions with three brigades each, one armoured division and some other units including territorial forces in Gaza and in Sharm-el-Sheikh. The infantry divisions were stationed in the Central Sinai in the Abu Ageila area and in the Gaza Strip and the armoured division was initially on the western side of the Suez Canal. According to van Creveld, the Egyptian forces in the Sinai totalled some 30,000 men. The Israelis committed some 45,000 combat troops divided into 10 brigades of which six were infantry, three armoured or mechanised and one was a paratroop brigade. The armour strength, some 500 tanks, was quite similar on both sides, although almost half of the Egyptian tanks were, as already mentioned, in reserve on the western side of the Suez Canal. There were 255 combat aircraft on the Egyptian side and some 150 on the Israeli side. About half the aircraft on both sides were jets. The overall deployments of the Egyptian forces were rather well known, as can be seen in the British intelligence documents. It is obvious that this information was also

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[309] Lanir, p. 20, Love, p. 642.

See also Dayan (1966), p. 32 and 38 – 39, O'Ballance (1959), p. 7 and Luttwak & Horowitz, p.142.

[310] IDFArc., file 35/804/1984, Dayan (1966), p. 39 and 96 and Luttwak & Horowitz, p. 146

See also IDFArc., file 42/464/1957 and file 138/172/1959.
In 1955 the Southern Command held a manoeuvre called "*Elephant*". This exercise included a plan to conquer the Sinai, or at least the northern part of the peninsula. In addition, in spring 1956 at least the 27th Mechanised Brigade tested its plans in a manoeuvre where the aim was an operational offensive. The troops of this one-sided exercise consisted, in addition to the troops of the brigade itself, of paratroopers and of the men of the Air Force who were to provide close air support.

in Israeli hands after the Sèvres negotiations. The strengths, orders of battle and losses of the Sinai Campaign can be seen in Appendix 8.[311]

7.2. Different operational solutions

Gunther Rothenberg divides the Sinai Campaign into three phases: a division also used in this work. They are:

- The opening phase of 29 – 30 October when Israeli paratroopers were dropped on the eastern end of the Mitla Pass deep in the Sinai while divisional task forces crossed the border to engage the main lines of defence of the Egyptians.
- The breakthrough phase of 31 October to 1 November in the main Egyptian lines of defence in the Central and Northern Sinai, in the Mitla Pass and in the Gaza area.
- The exploitation on 2 – 5 November when the Israelis advanced to the Suez Canal and conquered the Southern Sinai.

A map of Israeli moves in "Operation *Kaddesh*" can be seen in Appendix 9.[312]

Because of the secret Sèvres agreement with the British and the French, the Israelis were not able to launch an offensive according to their own doctrine. This made both pre-emptive air-strikes as well as concentrated commitments of ground forces in the initial phases of the war impossible. Besides, according to Tal and Wallach, the principle of delivering the first blow was only adopted after the 1956 War. Kenneth Love also links this idea to air superiority. The IDF General Staff, including Dayan, clearly understood the need for air superiority in order to be successful in desert warfare with infantry forces. However, the General Staff did not share the IAF's confidence in its ability to eliminate Egyptian air-power on the ground – to the disappointment of the Israeli airmen according to Cohen – so the air-strikes against Egyptian Air

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[311] Dupuy (1992), p. 146 – 147 and 212 – 213, van Creveld (1998), p. 142 and 148 and HQ 2 (BR) Corps ISUM No 4, 20 September, 1956 and HQ 2 (BR) Corps ISUM No 6, 10 October, 1956, Public Record Office, file WO 288/51/7803.

See also HQ 2 (BR) Corps situation report 31 October, 1956, Public Record Office file WO 288/51/ 7803.

This report shows that the Israelis also transmitted their reports to the British supreme staff in "Operation *Musketeer*".

Dupuy states that the Egyptians committed some 50,000 men in the war. It is possible that this is the strength of the forces before deductions or that he has also counted all the reserve forces that the Egyptian used in the Sinai during the war.

According to Dupuy, the Israelis mobilised all of their mobile field force's 18 brigades, of which 12 were assigned to the Southern Command. Only 10 were used, so in this view two brigades were left somewhere in reserve. In addition, six brigades were held in reserve, ready to deal with hostile moves from Syria and Jordan.

[312] Rothenberg, p. 107.

See also Barker, A. J: Suez: The Seven Day War, Faber and Faber Ltd, London 1964, p. 75 – 77 and Love, p. 489 – 491.

The war can also be seen as being divided into different phases within the context of operational directions and from the point of view of the belligerent parties as well.

Force targets were not carried out. The Israeli Air Force was kept back to support the ground forces. In addition, according to Love it might well have been possible that Dayan, guessing of the Anglo-French air operation to come, calculated Israeli moves based on this, as already discussed. In any case, the advantage of surprise, an important element in manoeuvre warfare, was left unused and troops were committed with set-piece tactics.[313]

The imbalance between the Israeli strategic plan and the operational implementation was also to cause problems for the Israeli supreme command. Operational commanders, who didn't know the political context of the war and were trained to act independently according to the battlefield situation, made moves that were against the strategic plan. In addition, the imbalance between the plan and its implementation was a consequence of Dayan's command style, which was to move on the battlefield. This meant that he was also often out of reach of any communications just when his decision was needed. In a way, however, Dayan's overall principle that "the enemy will be given no time to reorganise after the assault and there will be no pause in fighting" compensated for this deficiency. According to this concept, the supreme command organised its forces to be as independent as possible. Thus, *Ugdah*s were deployed against the Egyptians to achieve their separate objectives in their own sectors independently. This meant, nevertheless, at the same time the loss of the possibility of concentrating forces. In any case, some kind of centre of gravity in the Israeli effort can be seen on the east-west axis of the Central and Northern Sinai.[314]

In the Central Sinai, the Israeli 38th *Ugdah* consisted of two infantry brigades (4th and 10th) and two armoured brigades (7th Armoured and 37th Mechanised). The overly independent mission orientation caused gaps in the co-ordination of movements. The task force failed to reach its initial objective and committed the 7th Armoured Brigade prematurely, though successfully, in battle, although Dayan had reserved this decision for himself. According to Luttwak and Horowitz, the early failures were partly also consequences of the deficiencies in officers' combat spirit as well as a lack of elementary tactical skills in the 10th Infantry and 37th Mechanised Brigades. They also maintain that it was partly because of Dayan's eagerness to strengthen the "teeth" units at the expense of the support units. The term "teeth" means units that are intended for direct combat missions while "tail" units in the rear echelons support combat units. In

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[313] Love, p. 487 – 489, Kwallek, Jeffrey A: OPDEC: The Operational Commander's Key to Surprise and Victory, Naval War College, Newport RI, June 1994, p. 16, Cohen, p. 102 – 103, Tal, p. 27 and Wallach (1970), p. 129 – 130.

See also Rothenberg, p. 106 – 107.

According to Rothenberg, the intense pressure expected both from the United States and the Soviet Union prohibited Ben-Gurion and Dayan from opening the campaign with a classic strike against the Egyptian Air Force on the ground. It also prevented the deployment of armour in concentrated attacks in the beginning of the war until Anglo-French operations would have begun.

Bar-Zohar mentions that Ben-Gurion had to restrain Dayan's demands for a pre-emptive war against Egypt. This does not mean a pre-emptive air-strike. Bar-Zohar describes the situation when Egypt had closed the Strait of Tiran, but when the secret negotiations with the British and French had yet not begun.

[314] Dayan (1966), p. 39 and 96, Love, p. 546 and Luttwak & Horowitz, p. 146.

Israel's case, the "teeth" were 50 percent of the force, which was a consequence of streamlined administration and short supply lines while, according to Kenneth Love, most armies at the time were 20 percent "teeth" and 80 percent "tail". As a result, the campaign in the Central Sinai was marked by frequent breakdowns in communications and logistics, and not all were caused by poor equipment. Nevertheless, according to van Creveld the use of the 7th Armoured Brigade changed the character of the campaign from an advance by motorised infantry into a highly effective, if technically primitive, *Blitzkrieg* based on tanks. What had originally been planned as an auxiliary thrust was suddenly turned into the main thrust, but the Israelis proved to be flexible enough to recognise what was happening and change their plans. Therefore, the 7th Brigade's subsequent operations can be compared to Liddell Hart's principle of the "expanding torrent". While the infantry attack forced the Egyptians to concentrate on the front line situation, the tanks found their way into the enemy's rear with "recon-pull" tactics. Together with the overall Egyptian withdrawal, this finally led to the exploitation phase that ended on the Suez Canal.[315]

In the Northern Sinai on the Rafah - El Arish axis, the 77th *Ugdah*, which consisted of two infantry brigades (1st and 11th) and one mechanised brigade (27th), carried out a more or less balanced and continuous combined arms operation. With the help of aerial reconnaissance, the Israelis on the northern axis – unlike the Central Sinai – were quite well aware of Egyptian deployments and had, in addition, more time to prepare for their operation, which was supposed to start on 1 November. However, the possibility of operational surprise was not realistic because hostilities had already begun. Therefore, the Israelis based their plan on a combined arms operation. In this case, the encircling infantry was to break through the enemy's defensive lines to the road network in the less defended rear area. In the second phase, the tanks were to finish the envelopment. The plan had similarities to Fuller's "Plan

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[315] Luttwak & Horowitz, p. 157, van Creveld (1985), p. 197, van Creveld (1998), p. 144, Katz (1996), 52 and Dayan (1966), p. 96.

The "tail" units also included artillery.

See also Love, p. 492, 507 and 518, Gawrych (1990), p. 36 – 37 and IDFArc., file 35/727/1957.

In the war plans of the Israelis, there was a 24 hour break between the opening move of the paratroopers and the ground offensive. Because of the premature commitment of the 38th *Ugdah*'s forces, Dayan was obliged to move the planned schedule of the second phase of the war up 24 hours.

Dayan criticised the early commitment of the Southern Command troops. However, in his memoirs he basically says that he was wrong, as he himself also says in his book *Diary of the Sinai Campaign.* The quote is as follows: "Better to be engaged in restraining the noble stallion than in prodding the reluctant mule." Commanders just acted like they had learned and were expected to behave.

According to Gawrych, Dayan was the only one of the military men who knew the political context. Therefore, he had reserved the use of the 7th Armoured Brigade for himself to release the paratroopers from Mitla, if something went wrong.

On the 9 September 1956, the Armoured Corps gave an order concerning the operational principles of armoured formations during a possible war. According to this, tanks were to be used to break through enemy lines of communications in at least battalion-size combinations to prevent the use of enemy reserves. This order might also have had an influence on the behaviour of the armoured commanders.

1919", where medium tanks advanced on the flanks of the infantry to the objective, excluding the fact that the Israelis did not have heavy tanks in support of the infantry. The overall plan was also finally carried out this way, although the infantry had great difficulties in their sector. Some detachments lost their way to the objective, there was a danger of friendly fire, and some units got stuck in the minefields and had to dismount under artillery fire. However, the commitment of the armoured forces turned the situation in Israel's favour. The tanks succeeded in breaking through the Egyptian lines, which finally lead, together with the Egyptian withdrawal order, to fast manoeuvre spearheaded by tanks and assisted by IAF interdiction on this part of the front as well.[316]

The independent brigades were all used in different types of tasks. The 202nd Paratroop Brigade had a dual mission in the war. In the opening phase, the battalion that was dropped on the Mitla Pass created an immediate threat to the Suez Canal area and in this way fulfilled Israel's commitments in the Anglo-French agreement. Therefore, this operation was not a typical part of deep penetration in manoeuvre warfare, although – in operational terms – this Israeli movement drew Egyptian reserves and attention away from the front to cope with this threat. Thus, it can be seen as having been an effort to unbalance and dislocate the Egyptians. The paratroop operation in Mitla confused the Egyptians and delayed their countermeasures. When their counter-operations finally began, the armoured reserves were then continuously on the road, away from the places where they would have been needed. Simultaneously, the main bulk of the paratroop brigade fought its way through rather thin Egyptian defence lines in the south central part of the Sinai to link up with and reinforce the Mitla battalion. According to Yuval Ne'eman, this encirclement created an Israeli held southern flank from which all the operations in the Sinai could fan out northwards. In reality this was only partly implemented. The 202nd Paratroop Brigade was stuck in exhausting battles at Mitla Pass but, nevertheless, the operation created a firm base for the capture of the Southern Sinai by the 9th Infantry Brigade. The paratroopers were used as a spearhead only in the final phase of the war; the brigade was taken into the General Staff's reserve for use in mobile operations. However at the time the situation had changed and the need for mobile operations was not acute

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[316] Marshall, p. 146 – 147 and 225 and Pietiläinen, Kari: Panssarisodankäynnin teoreetikot ja toteuttajat israelilaisessa sotataidossa, Maanpuolustuskorkeakoulun diplomityö (Theoreticians and Practicers of Armoured Warfare in the Israeli Military Art, a study work of General Staff Officer Course, National Defence College Finland), Helsinki August 1998, p. 51.

In this direction, the Egyptians also put up a stiff resistance. According to Marshall, half of the Israeli tanks were hit, although they were not all destroyed.
See also O'Ballance (1959), p. 139.
According to O'Ballance, the advantage of surprise was lost when the combat engineers, who were sent to clear and mark lanes in the Egyptian minefields a day before the operation, were discovered.

anymore, although two airlifted airborne battalions of the brigade assisted in the capture of the Southern Sinai.[317]

Gaza was considered to be a difficult objective in the initial phase of the war, taking too much time and too many troops. It was therefore only encircled and left until later according to the idea of the least expected. Later, when its communication lines were cut off, Gaza was expected to drop like a ripe fruit. This worked well. The plan, which reversed the logical order of objectives in line with the "least expected", deceived the Egyptians about the scope and direction of the Israeli offensive. The force ratio, the Israeli 11th Infantry Brigade and in the final phase the 12th Infantry Brigade against two Egyptian and Palestinian brigades, was approximately 1:1. However, the enemy's forces were almost immobile and therefore the Israelis chose mobile tactics equivalent to the paratroopers at Mitla; they drove swiftly through the Egyptian lines with a task force of armoured personnel carriers while mopping up what was left with the infantry. In the Gaza area this approach was quite successful, the defensive lines were bypassed and the pace was only slowed in the most thickly populated areas, where the resistance was quite heavy, while infantry was moved to spearhead the assault. Within two days and with the help of officials of the United Nations, the Egyptians and Palestinians surrendered.[318]

The best example of the indirect approach, and the preference for terrain, can be seen in the operations of the 9th Infantry Brigade. This brigade crossed the mountainous and pathless desert of the southern half of the Sinai Peninsula, which was still almost unknown at the time, and conquered the southern tip of the peninsula, almost by itself. The commander of the brigade was Colonel Avraham Yoffe, an ex-member of Wingate's S.N.S. Liddell Hart also commented on Yoffe's operation in The Jewish Chronicle by citing his own book *Strategy.* According to him, "the great captains will take the most hazardous indirect approach over deserts or mountains or swamps (which may here be interpreted as soft sand) in preference to accepting the risk of frustration inherent in the direct approach, for all conditions are more

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[317] Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 13, Rothenberg, p. 106 – 107 and O'Ballance (1959), p. 91.

See also Dayan (1966), p. 91, and Sharon, p. 144.
Colonel Sharon was accused of incurring excessive casualties in the paratroop brigade when it became stuck in bloody fighting in the Mitla Pass. Sharon has two explanations for his action. The first was that the location of the initial drop zone was wrong because the IAF failed to transmit intelligence data to the paratroopers. The losses were also partly a consequence of the paratroopers' tactics; they were trained to act offensively. Sharon's command style was also criticised. He was not with the ambushed spearhead. There was no question of a lack of courage, Sharon's achievements during the counter-guerrilla raids in the early 1950s had proved that. According to Sharon, he placed himself so that he was not in charge of the expeditionary force aimed at pushing through the pass, but with the main body of the brigade to cope with the primary threat, the expected offence of the Egyptian reserves. An equivalent situation developed later in the Yom Kippur War. Lt. Col Avigdor Kahalani, commander of the 77th Armoured Battalion in the Golan Heights, also decided to stay with the main bulk of his battalion despite the uncertainty of the fate of his spearhead. He was not critisised for that, though the casualties were also minor. See Kahalani, Avigdor: The Heights of Courage. A tank leader's war on the Golan, Greenwood Press, London 1984, p. 173.

[318] Luttwak & Horowitz, p. 146, Dayan (1966), p. 162 – 163 and Love, p. 546.

calculable, all obstacles more surmountable than those of the human resistance."[319] The carefully planned, equipped and supplied operation of the 9th Brigade surprised the Egyptians almost completely. The brigade had only one major battle with the Egyptians. This was in the destination area at Sharm-el-Sheikh. While the initial breakthrough tactics on the move, as at Mitla and Gaza, were not an immediate success, an encirclement together with the paratroopers forced the Egyptians to surrender on the third day after the beginning of the operation. The operations of the 9th Brigade were supported by aerial reconnaissance and sea transport. Thus, this operation can be seen as having been a joint operation, although a rather primitive one. The co-ordination of aerial and naval elements was chiefly done at the General Staff level.[320]

7.3. The Air Force and Navy

For the Israeli Air Force, the Suez Campaign was a disappointment in a way. Over the years before the war the IAF had developed its operation order "*Slope*" to get air superiority by destroying the Egyptian Air Force on the ground. This blueprint was shelved during the planning process of "*Kaddesh*", mainly because the General Staff did not believe in the IAF's ability to execute it. According to Eliezer Cohen, Ben-Gurion's role in this was decisive. He was still haunted by nightmares of the bombings of WW II and therefore feared Egyptian air power. Ben-Gurion also expected that while the IAF supported the Israeli offensive in the Sinai they alone would not be capable of protecting Israel's cities from destruction. Therefore, the French promised in the planning process to provide the necessary air defence, and in the days before the offensive two French fighter squadrons were shifted to Israel. In addition, French cargo planes transported material before and during "Operation

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[319] The Jewish Chronicle, November 16, 1956. Israel's Sinai Campaign. Capt. Liddell Hart's Views by a special correspondent, LH 15/5/304, part 2, p. 17.

[320] A letter from Avraham Yoffe to Liddell Hart, December 8th, 1968, LH 2/24, a letter from Avraham Yoffe to Liddell Hart, March 3, 1969, LH 2/24.

In his correspondence with Liddell Hart, General Yoffe revealed that he had known Liddell Hart "through his books for so many years". In February 1969 they also met each other.
See also Marshall, p. 201 – 202 and 209 – 210, Dayan (1966), p. 192 – 194, O'Ballance (1959), p. 157 and 175 and Heiman, Leo, Israeli Army's Strategical and Tactical Doctrine, An Cosantoir, January 1965, LH 15/5/307, p. 49.
Originally, the 9th Brigade had one day to carry out its mission. According to Marshall, even Colonel Yoffe gasped for breath after hearing the mission and its timetable. However, Yoffe was able to implement his operation with detailed planning and careful organisation of his independent sub-units. The operation took three days and two nights, of which one day was spent waiting for the beginning of the Anglo-French operation and one night was spent waiting after the initial failures in the Sharm-el-Sheikh area.
According to Leo Heiman, Yoffe's application of the "Strategy of Indirect Approach" was later called the "Impossible Approach Concept" in the 1960s.

Kaddesh".[321] However, the Israeli supreme command's lack of confidence in the Air Force was obviously only one part of the explanation for why the pre-emptive air strike was not made. The second and more important reason was the political concept of the war. The Anglo-French invasion of the Suez Canal area would not have been possible if Israel had launched an all-out war against Egypt. Besides, the doctrinal principle of pre-emption was truly developed only after the war.

The IAF flew some 1,900 sorties during the war. This number wasn't divided evenly over the seven days of the war. In the first phase, the Air Force was restricted by the order to avoid air-to-ground action until the British and French had dealt with the Egyptian airfields. Once this order was amended, the IAF was committed to aerial battles and ground support. The role of the Anglo-French air invasion eased the task of the IAF. By nightfall on 2 November, the Egyptian Air Force had, according to Jackson, been eliminated as a fighting force, including the *Il-28* bombers that had posed a threat to Israel's heartland. The British estimates of the performance of the Egyptian army at the end of November 1956 also confirm this. The Egyptian Air Force had been rendered virtually ineffective. This translated into air superiority for the Israelis in the final days of the war and the possibility of providing aerial support for the ground forces. This achievement was not lost on the Israelis; the need for air superiority in the conduct of ground operations in mobile warfare influenced the list of priorities for future IAF procurement.[322]

In the dog-fights, the Israelis were superior to their counterparts. Robert Jackson estimates that the Egyptians had great difficulties in mastering the

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[321] Cohen, p. 101 – 103, Jackson, p. 39, 41 – 42 and 46 – 47, Williams (1989), p. 104 – 105 and van Creveld (1998), p.141.

The unmanned Israeli *Mystère IV*s were also flown by French pilots. However, according to Williams, General Tolkowsky, the commander-in-chief of the Air Force, conceded that the presence of the French might also have been an advantage; it would have helped the Israelis to concentrate on destroying the Egyptian Air Force on the ground. In any case, this latter vision did not come true.

See also Dupuy (1992), p. 212 and Love, p. 493.

The estimates of the strengths of the Israeli and Egyptian Air Forces vary greatly depending on the number of delivered and operational planes. It seems that when operational fighter planes are counted, the force ratio was near 1:1 when the French support of the Israelis is included.

[322] Williams (1989), p. 106, Jackson, p. 75, Cohen, p. 147, Bagnall, p. 33 – 34 and HQ 2 (BR) Corps, 24 November, 1956, Public Record Office, file WO 288/51/7803.

Cohen underestimates the role of the British and French. According to him, "Operation *Musketeer*" (code name of the Anglo-French invasion) served as an example of failure; it taught any pilot who idolised such experienced and well-equipped air forces as those of France and Great Britain that a lack of planning, professionalism, and dedication meant certain doom." However, this analysis is not fair. The importance of the Anglo-French air operation to Israeli air superiority is indisputable.

See also O'Ballance (1959), p. 141.

According to the author, Israeli planes flew eight sorties/plane/day. This number is obviously too large on average. However, in the hottest phase of the war, combat aircraft might have flown more than five sorties/day. The actual numbers are not so important; what is important is the efficacy of the IAF ground system. It was at a very high level already in this campaign. This at least doubled or tripled the strength of the IAF when calculating its effect on its objectives.

Russian-built jets and therefore fewer than 200 pilots, out of a total of 500, were capable of flying the jets. Besides, the Egyptian tactics, when comparing to the Israelis', were obsolete. The Egyptians flew in methodical and tight 12-plane WW II-style formations. These were clumsy tactics against the smaller and quicker formations of Israeli *Mystères*. As with their ground forces, the Israelis based their actions more on delegated and individual decision-making. According to Doctor Raanan Gissin, this small formation combat, similar to the British Air Force during WW II, put a high premium on flexibility, surprise, and high levels of trust in the judgment of operational combat commanders. The only severe restriction in the flight missions was the range of the IAF planes; they could stay in the area of operations for only a short time.[323]

Around 500 of the Israeli sorties were attacks on ground targets. Interdiction eased the fighting in the central areas of the battlefield; in Abu Ageila and Rafah the Air Force prevented the commitment of the Egyptian reserves to battle. In addition, the transport support of the ground troops was particularly decisive in the battles for Sharm-el-Sheikh and Mitla. However, in direct support the Israelis had problems. Forward air controllers were rare, which was a consequence of the priority of the tasks of the IAF. Ground support was seen as a secondary mission before the war. The IAF's flight control network, which was meant to guarantee flexibility and maximum use of force, was also still in its infancy. Long-range radar systems didn't exist yet and communication systems were inadequate. Tactical air reconnaissance supporting the armoured penetrations was also seen to have been too slight. All the factors listed above resulted in repeated breakdowns in the passage of information between the air and ground forces and caused casualties from friendly fire in several areas, including Abu Ageila and Rafah. In addition, after the war it was estimated that the equipment of the air force and the task of supporting ground forces were not in balance. Despite the purchase of new aircraft, there were only a limited number of planes that were suited for ground support. Therefore, the support could only be used in one direction at a time. This led to a demand to optimise the use of the existing planes.[324]

During the 1956 War, Israeli sea operations were of little significance. This was first of all a consequence of the Anglo-French naval dominance both in the Mediterranean and in the Red Sea. The Anglo-French fleet – including several aircraft carriers in the Mediterranean – fully occupied the Egyptians in coping with this threat. Therefore, only two Israeli naval operations are worth mentioning. The first was the capture of the Egyptian destroyer *Ibrahim*. The crew of this vessel surrendered to the Israelis on 30 October after Israeli fighter-bombers had damaged its steering. The second was the sea transport

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[323] Jackson, p. 80 and 98, Cohen, p. 121 and Gissin, p 128.

See also Dupuy (1992), p. 212.

The aircraft losses of the Israelis vary between 12 and 15. All of them were lost to ground fire.

[324] Cohen, p. 147 – 148, Dayan (1966), p. 103 and 132 – 133, van Creveld (1998), p. 150, IDFArc., file 137/776/1959, IDFArc., file 125/516/1970 and file 130/516/1970.

The casualties from friendly fire were partly due to the use of captured enemy vehicles that were not equipped with Israeli identification marks.

of supplies with a detachment of landing craft in the Gulf of Akaba to the 9th Infantry Brigade deep in the Sinai.[325]

7.4. Assessment of the operational art

According to Rothenberg, much of the Israeli style of warfare was patterned on Liddell Hart's principles. The initial surprise was sought by silent mobilisation and with troop deployments against the Jordanian border. The tendency to avoid frontal battles if possible, the choice of the least expected lines of advance and the use of darkness dominated. Soon after the war, Liddell Hart commented on the Sinai Campaign in The Jewish Chronicle. According to him, "the Israeli campaign has been a masterpiece of strategic art ... It is one of the best examples of the "Strategy of Indirect Approach" in modern times or in all history. It applied the method of threatening alternative objectives and by the distraction of the enemy's mind and forces, created in the move towards the Suez Canal in the south, both concealed and eased the way for the concentrated stroke against the enemy rear ... It is evident that the tactical execution matched the conception – fulfilling and combining most brilliantly the dual principles of speed and surprise that are fundamental to the success in war".[326]

True, the traits of the "Strategy of Indirect Approach" can be seen in the Israeli art of war in this war. However, one must keep in mind that most of the things that influenced the result of the war – advantages and shortcomings on both sides – were not yet known at the time. Therefore, it is natural that this short, victorious war strengthened Liddell Hart's belief in his own ideas. Nevertheless, it is obvious that Liddell Hart's ideas were applied at least to some extent, because he had so many direct or indirect connections to the Israelis before this war. Doctor Israel Beer confirms this in an article in *Haaretz* on 25 March 1960 in the context of Liddell Hart's visit to Israel by saying that "The Israeli army not only fought in accordance with many tactical ideas of Liddell Hart, but their higher defence policy has always been inspired by a sense for the practical, by the refusal of over-ambitious and advantageous schemes, and finally by deep regard for the fundamental, political and social aims of warfare, all of which Liddell Hart has always regarded as the hallmarks of positive strategy. The Hebrew way of warfare grew, one might say, out of a thousand years old tradition and its lessons, and on the other hand, it is the result of the hard and concrete facts. Precisely, because of this a whole

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[325] Dupuy (1992), p. 209 – 211 and Jackson, p. 60.

[326] Israel's Sinai Campaign, The Jewish Chronicle, November 16, 1956, p.17 and Wallach, J. L: Obituary of Sir Basil Liddell Hart, LH 2/22, p. 6.

See also van Creveld (1998), p. 142.
However according to van Creveld, the masquerade of silent mobilisation was dropped on 26 October, three days before the beginning of the Mitla airdrop, and a public call-up went out by way of radio and newspaper; the Israeli people, believing themselves in imminent danger, responded enthusiastically.

generation of *Haganah* and IDF commanders was attracted to them and received their military education by Liddell Hart's works."[327]

Evaluations of the Egyptian performance also led to Moshe Dayan's so-called "collapse theory", which can be linked to the indirect approach. Theoretically Dayan's theory also fit the principles of manoeuvre warfare, especially the principle of dislocation. The "collapse theory" was based on the assumption that a strategy of exploiting high mobility in order to appear in the enemy's rear and cut his lines of communications would bring about his defeat. In any case, the principles mentioned above were also included in the issues that Dayan had stressed in his estimate on how the IDF should prepare for a possible future war even before the threat of war became real in summer 1956. In this assessment, the spirit of mobility and reconnaissance take a central place; Dayan emphasised the importance of time which would make swift offensive operations necessary, the ability to carry out encirclements and the skill of night-fighting. Therefore it seems that, from the tactical point of view, Dayan's aims can also be linked with his own experiences in Wingate's S.N.S. and on the southern front during the War of Independence.[328]

However in his book *Sinai Victory,* an American officer and military analyst, S. L. A. Marshall, shows that the Israelis had also created concrete tactical fighting principles in addition to their strategic and operational doctrine. Brigadier Marshall, who was known to have been a keen advocate of Fuller, also tends to see Fuller's principles of war as being loosely behind this list. True, there are similarities, although the principles of war have generally been very similar all over the world, only the emphases have varied. In any case, the more striking thing was the Israeli use of armoured forces according to the principle of the "expanding torrent", which can be derived more from Liddell Hart than Fuller, as already discussed. According to Marshall, the Israelis also won the Sinai Campaign with extended daring. This opinion is quite apt, but it can be interpreted in many ways. Nevertheless, everything was based on individuals; on their skills and especially on the motivation that resulted in the development of an offensive spirit among the troops. General Uri Simhoni confirms this. During the Sinai Campaign he was a young Lieutenant in the paratrooper battalion that was dropped in the Mitla Pass. According to him, at that time – and this also was the case during the Six Day War in 1967 – IDF soldiers relied completely on themselves. On the whole, it can be estimated that the Israeli success during the war was a combination of adopted concepts and principles applied to individual skills, imaginative command principles, and

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[327] Beer, Israel: Liddell Hart in Tel Aviv, 25.3.1960, a copy of a *Haaretz*' article written one day before Liddell Hart's lecture in Z.O.A. House in Tel Aviv, LH 15/5/304, part 2.

[328] IDFArc., file 35/727/1957 and file 4/59/1958, Lanir, p. 21, Luttwak & Horowitz, p. 142, Harris, J. P. - Toase, F. H. (ed.): Armoured Warfare, B. T. Batsford Ltd., London 1990, p. 164 – 165 and Messenger, Charles: The Art of Blitzkrieg, Ian Allan Ltd., London 1976, p. 228.

See also Barker (1964), p. 84 – 85.
According to Barker, the Egyptian divisions in the Sinai were the cream of Nasser's army, especially the 3rd Division which fought stubbornly in the Central Sinai until the withdrawal order came. This seems to be at least partly true. The 3rd Division fought very well before the withdrawal order.

daring operational solutions. In addition, the role of the Anglo-French invasion, luck and Egyptian failures also made the swift conquest of the Sinai possible.[329] The Israeli tactical fighting principles can be seen in Appendix 10.

7.4.1. In pursuit of flexible command

The centre of gravity of the Israeli effort was in the Central and Northern Sinai, although one can not speak of a very concentrated effort. Dayan's plan did not attempt to co-ordinate the advance of different *Ugdah*s in order to concentrate them on a single objective. They were brigades, reinforced with additional troops, that implemented the operational tasks but in many cases with tactical means. In addition, those brigades that were not included in the *Ugdah*s also had independent tasks and sectors. Thus, the operational independence of Israeli formations was striking. This is clearly revealed in Yitzhak Rabin's words as cited by Luttwak and Horowitz: "The brigades were given a set of initial guidelines which defined only objectives, targets and time-tables, demarcation lines between different units and the general method of conducting the battle." This was based on the supposition that there would be a lot of breaks in communications. Thus, the long-term concept of operations was a prerequisite to success in mobile operations. This was also possible because the commanders had already adopted the principle of maintenance of aim. Nevertheless, although the brigades generally performed well, it was not a question of success in the initial battles. The command style of the formations was short-sighted, though intuitive, and less attention was paid to more long-time operational planning or to co-operation between branches, services and other formations. The result of the operational independence of the brigades was that the possibility of concentrating formations was lost. Troops were engaged in one continuous battle which lasted until their objectives were reached or the cease-fire stopped their movements. In addition, the reserves were organic, and included in these task forces and brigades. No additional reserves were available for the use of the Southern Front on short notice.[330]

Dayan's command principles excluded himself, the General Staff – and more or less the Southern Command as well – from the chain of command and co-ordination of operations. Therefore, the Southern Command acted like the General Staff didn't exist, and to a lesser degree the task forces and brigades also acted in the same way with regards to their superiors. Not having to follow

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[329] Marshall, p. 17 – 20 and 22 – 23, interview of Major General (ret.) Uri Simhoni.
See also Fall, p. 3.
Fall noted only half a year after the war that better communications – better than the enemy had in any case – logistical flexibility, and air cover in the later stages of the war were the dominant factors that made mobile operations possible. The listed item are central in mobile warfare. At least the Israelis seem to have understood the importance of these things to some extent. Fall nevertheless fails to see that without the emphasis on finding gaps in enemy lines mobile operations would not have been possible with such small forces.

[330] Rothenberg, p. 140, O'Ballance (1959), p. 80 – 81, Love, p. 546, Luttwak & Horowitz, p. 144, 146 and 161 – 163, van Creveld (1998), p. 158 and 196 – 197.

detailed plans prepared in advance or being subject to a continuous flow of orders from above, the brigade commanders and their staffs were free to make their own tactical decisions. The role that was left to the higher headquarters at every level was to co-ordinate the moves of different formations. In the 1956 War, this latter aim was not yet achieved. The lack of proper signals equipment was the main reason but also organisational and principal facts can be seen behind this. After all, the independence of the formations solved the problem of co-ordination, although there was no co-ordination at all in many cases at the *Ugdah* level because decision-making was delegated to brigades operating in their own sectors. Therefore no real provision was made to concentrate the efforts of the formations, especially during the battles against the Egyptian main defence line in the Central Sinai. In practice the role of the higher headquarters was limited to making sure that the units in the field adhered to their objectives, targets and timetables. In addition, because *Ugdah*s and brigades implemented operational tasks rather intuitively, sometimes the results were different – and also greater – than originally intended; for example, the drive up to the Suez Canal.[331]

The Israelis were also lucky with regards to the "fog of war". Mobilisation was left until the last days preceding the war and it caused transportation problems. There were deficiencies in equipment and organisation, logistical support worked near its absolute limit and communication problems were sometimes serious – although maybe not decisive because of the independence of the formations. The brigade organisations were not balanced enough for modern warfare, although this deficiency was not fully revealed in this short war. The Egyptian withdrawal order also greatly helped the Israelis, especially in the Central Sinai. In addition, the need for Israeli naval operations was – as already mentioned – minimal, which let the Israelis concentrate their efforts on operations in the Sinai.

Combined arms operations were only in their infancy, partly because of the lack of equipment and partly because of inexperience in using the support of different branches. In organisations, the Israelis have favoured organic support, as was the case with reserves. Sappers were attached to battalions mainly for mine-clearance, other engineering tasks were seen as being secondary in mobile warfare. This worked well enough in this war. Anti-tank missions were delegated to the artillery. Its shortcomings were not revealed. The Egyptian armoured forces were mostly dug-in, and the minor use of mobile armoured reserves was successfully prevented by the Israeli Air Force and armoured units. However, because of the experience gained in the war,

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[331] Ibid.

See also Gawrych (1990), p. 52 and 58.

According to Gawrych, one reason for the initial failures in the Central Sinai (Kusseima – Umm Katef – Abu Ageila) was Dayan's command style. Because he was away from the General Headquarters most of the time, he was not really able to co-ordinate operations in the whole theatre. Nevertheless, Dayan did not delegate his power of decision to the General Staff. Instead, he interfered in his subordinates' command processes without a clear picture of the situation.

the anti-tank function, which had already included wire-guided missiles, was transferred after the war from the artillery to the infantry.[332]

Logistic support was also a risk factor. Understanding this, the Israeli brigades were built to survive independently without any extraordinary help from higher echelons. In addition, the IDF had adopted a principle of not waiting for supply trains. Principally, this concept of self-sufficiency supported the idea of mobile warfare. As already discussed, Dayan's favourite act was to increase the "teeth" at the expense of the "tail"; however, this meant deficiencies both in personnel and in plans. Without overall logistical plans and with civilian vehicles delivering material to the front lines, and with more or less decent traffic discipline, breakdowns in supply lines were not exceptional events. In several cases there were also problems in finding stocks that were laid down in advance or supply trains that were pushing material ahead. Nevertheless, the Israelis succeeded in avoiding major problems in this short war waged on interior lines.[333]

The most important of the principal and organisational deficiencies was the role of the field artillery. The need for artillery support, especially behind the forward lines of troops was not understood in Israel. However, in this case, the Egyptian resistance in depth, namely their anti-tank defence, was not decisive, and therefore the need for Israeli artillery was seen as being slight. Besides, in many cases an artillery barrage was seen as being against the principle of surprise; for example, in the case of the paratroopers. On the whole, according to Williams the Sinai Campaign was a sad experience for the artillerymen. Infantry commanders were only dimly aware of what artillery could do for them. This was especially the case in the armoured brigades. In the initial breakthrough battles artillery was used against enemy fortifications but not in a concentrated effort and not at all in the enemy's depth. In addition, according to Yuval Ne'eman, the Israeli tendency of attacking at night did not favour the use of artillery. In the Sinai Campaign – as in the War of Independence – 80% of infantry attacks were carried out at night. However, he does mention that artillery was also used at night, wherever possible. Thus, the neglect of artillery was partly also a consequence of a lack of proper equipment and partly of the success of the armoured formations and the Air Force, which was seen as compensating for the need for mobile artillery. The result was that although the Artillery Corps began to integrate a divisional artillery concept after the war, the underestimation of artillery continued up until the mid-1970s, when the

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[332] Williams (1989), p. 237.

See also Handel, p. 568.
According to Handel, the Israelis had a poor overall understanding of modern weapons technology in the early 1950s.

[333] Schiff (1974), p. 83, Marshall, S. L. A: Sinai Victory, William Morrow and Company, New York 1958, p. 148, 155 – 156 and 186, Dayan (1966), p. 22 – 23 and IDFArc., file 125/516/1970.

See also IDFArc., file 266/746/1959.
Since the 1956 War, the overall logistical principle of the IDF has been to push material ahead. In 1953 the General Staff gave instructions on logistical support. In offence the most important factor was fuel resupply and in defence fuel and ammunition supply. Despite the fact that material was pushed ahead, the IDF had some sort of rear services at all levels. Obviously this principle also enabled the echelons of supply, the "tail", to be lightened.

experiences of the Yom Kippur War finally led the Israelis to develop their artillery within the combined arms concept.[334]

7.4.2. The role of armour begins to rise

Dayan's hypothesis on the Egyptian collapse didn't fully form until the Egyptian withdrawal after the beginning of the Anglo-French bombardment. The second aim, the destruction or capture of the enemy's equipment was also only half carried out. Although Dayan trusted the ability of the light formations to break into the enemy's depth, the Israeli force structure was not adequate for the second aim. In addition, it is also obvious that the policy of staying on a defensive posture before the beginning of the Anglo-French operation deprived the IDF of even the possibility of surprising the Egyptians and breaking though their lines of communication, whatever the force structure would have been.

According to van Creveld, "the (operational) system (adopted by the Israelis) might have been well adapted for seizing fleeting opportunities in armoured operations conducted against a mobile opponent, except that no such operations took place." This statement is quite apt, though two facts behind this viewpoint must be understood. First, even the possibility of mobile tank battles was almost absent because the Egyptians had dug-in almost all their tanks in the defence lines and the reserves never did reach the battlefield in mass. Second, the armoured *Ugdah* demanded by Laskov was not established; rather armoured and mechanised brigades were attached to existing *Ugdah*s. The tanks were left in reserve in these *Ugdah*s and were initially in a secondary role, though the tank formations mostly maintained their integrity and sub-units were not split up to support infantry forces. According to Colonel Ben-Ari, this meant the loss of "shock power", i.e., mobile infantry did not have the battlefield mobility and firepower to destroy the withdrawing Egyptians that tanks would have had. Therefore, according to Kadish, in the 1956 War the armoured breakthroughs were derivatives of the initiatives of local commanders, not a result of a generally accepted concept.[335]

On the whole, it can be said that up until the 1956 War – and mostly in that war as well – Israeli operational mobility was based more on movement than on firepower. The role of the tanks was to use the success in pursuits.[336] This

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[334] Williams (1989), p. 236 – 237, Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 15 – 16 and IDFArc., file 130/516/1970.

However, Williams mentions that initial efforts to deploy divisional artillery already appeared in the 1956 War.

See also IDFArc., 125/516/1970.

It mentions that in several cases the artillery fire-controllers didn't even have a means of communicating.

[335] van Creveld (1985), p. 149 and 196 – 197, IDFArc., file 125/516/1970 and file 13018/1034/1965 and interview of Professor Alon Kadish.

[336] IDFArc., file 43/160/1959.

The light *AMX* tanks used by the 27th Brigade on the northern axis were not suitable for breakthrough battles in properly defended areas. The other two brigades that had tanks

was a derivative of the pre-war thoughts of the mobile infantry school and the manoeuvre school. Therefore – and because of the policy that prevented the early use of breakthroughs – the view of the IDF tank officers on the concentrated effort of tanks bore only partial fruit in the war. Nevertheless, during the war after the failures of the infantry to breach the Egyptian lines armoured formations were committed to battle. In these operations the pre-war thinking of the Armoured Corps can be prominently seen. The most important was the principle of using tanks in a concentrated effort. In other words, although the armoured *Ugdah* was not established, at brigade level tanks were not split up to support infantry, but were mostly used in independent tasks where the potential of tanks to push through to enemy lines of communications was revealed. In addition, indirect means were dominant. Tanks were not used to push through enemy lines with force but more with a mixture of speed and encirclement. In this way, the operations resembled the tank manoeuvres in the early 1950s, which furthermore had strict similarities to the concept of the "expanding torrent". This reflected the tendency to avoid unnecessary losses in battles of attrition although it is obvious that the lack of modern tanks that would have had more battlefield durability and the lack of numbers that would have enabled a concentrated effort and "shock effect" also influenced this issue. As a result of all this, because of the positive experience of the use of tanks, the ideas of the mobile infantry school were gradually abandoned after the war, and the manoeuvre school and independent armour school formed the basis of the armour doctrine in the years to come.

Israel's ability to annihilate enemy forces was a new development. Despite the fact that the Egyptian army was not totally destroyed, its fighting capability and especially morale was, according to British intelligence estimates, severely hampered in the battles in the Sinai (and in Port Said). This coincides with the transformation that had occurred in the IDF from 1949 to 1956. According to Zvi Lanir, this was a change from light infantry to a boldly used, although rather primitive, operational structure in which armour and air power were the key components. It seems, nevertheless, that Lanir gives too optimistic a picture of the performance of the Israeli armour-air force component. Although they were quite successful in the war, the Armoured Corps especially would obviously have been too small and inadequately equipped to fight against a stubborn defence. In addition, the IAF was, in a way, in the shadow of the allied air forces and on the whole the allied operation also eased the task of the IDF. Therefore, it is better to say that the IDF had made the change from guerrilla and infantry tactics to mobile operational concepts between the War of Independence and the 1956 Sinai Campaign. At this phase the role of armour and air power was, however, only growing, though constantly.[337] Nevertheless,

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were mainly composed of *Shermans* that were, although not new, also suitable for tank-to-tank battles.

[337] G (OPS.), HQ 2 (Br.) Corps, 24 November, 1956, Public Record Office, file WO 288/51/7803 and Lanir, p. 21 – 22.

See also Young, Peter: The Israeli Campaign 1967, William Kimber and Co. Limited, London 1967, p. 183 – 184, Fall, p. 12 and Barker, p. 83.
All these authors compare Israeli armoured warfare to tank warfare classics in the previous wars. Similarities can be found. According to Barker and Young, the overall idea of the Israeli "Operation *Kaddesh*" was like General Wavell's first Western Desert campaign in

in the coming years tanks supported by the air force combined the basis of Israeli military art. The emphasis on a short war and a decisive victory was to show the way for the development of both the operational doctrine and the organisations.

North Africa against the Italians in 1940. Wavell – like the Israelis – used the indirect approach with vertical envelopment (encirclement) with good results. The controlled risk in the supply principles was also equivalent. The difference was that Wavell was distinctly inferior to the Italians, the Israelis were not. Second, Young and Fall compare the Israeli operational art of armoured forces to the German *Blitzkrieg* doctrine. However, the similarities were not so clear in this war because of the underdevelopment of the Israeli armoured warfare concept at that time. In the Six Day War, the situation was different. As Young notes the similarities were striking in the latter case.

8. THE DEVELOPMENT OF THE LIGHTNING WARFARE DOCTRINE

8.1. Conclusions and re-thinking the previous war

At the political-strategic level, the Israelis learned two things from the Suez Campaign. First, a military victory was not a guarantee of political success. Second, if a military operation was planned, it had to be supported or at least mentally accepted by a superpower. Otherwise, there would be no guarantee of keeping the war's gains. Up until the 1956 War, Israel's war aims were related to the question of national survival and to the protection of the armistice borders. After the Israeli withdrawal from the Sinai, the existing strategic concept that Israel had no positive war aims changed; after that the only aim was the preservation of the regional status quo.[338]

Israel's political goals in war also shifted. The political context emphasised that military power had to be strengthened to face the threat. Security had replaced peace as the first priority. During the period between the 1956 War and the Six Day War in 1967, the Israelis developed a strategic doctrine that was based on the deterrence power of the IDF. This deterrence would serve in the future as a constraint, in other words denial was, according to this concept, achieved in two ways: building the IDF both quantitatively and qualitatively so that it was strong enough to deter enemies and if this was not enough, getting a decisive victory on the battlefield. Thus, since Moshe Dayan's tenure as Chief of Staff the military operational meant, in the denial concept in conventional warfare, the annihilation of the enemy. However, that did not mean the total destruction of the enemy, rather it meant the neutralisation of his military power which would then raise the IDF's deterrence power. Nevertheless, the conquest of terrain also had its part in this doctrine. This is revealed in Moshe Dayan's words "security before peace". In practice this manner of thinking meant the conquest of terrain to reduce the vulnerability of Israel's operational depth.[339]

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[338] Lanir, p. 16 and 21 – 22, Bar-Siman-Tov, p. 83 and Tal, p. 34.

See also Handel, p. 563 and van Creveld (1998), p. 166.
Handel states that despite the powerful influence of the IDF on every facet of Israeli life, Israel has remained a solidly Western-style democracy. The military has rarely interfered in the domestic political arena (however, in 1967 Prime Minister Eshkol was pressured to launch the war). Instead, more often it has been civilian leaders who have deviated from democratic procedures (for example, the Lavon affair).
According to van Creveld, there was a consensus among the Israeli public after the 1956 War on the objectives of the state and its military instrument: to ensure survival at all costs.

[339] Lanir, p. 14 – 15 and Johnson, Paul: Profile: General Moshe Dayan. Israel's Coriolanus, New Statesman 29 August, 1969, LH 15/5/315, part 1, p. 270 and 272.

See also an article on the political disputes concerning Israeli borders in the mid 1960s, the Jewish Observer and Middle East Review, March 13, 1964, LH 2/2/61/37, p. 8 and a letter from Yigal Allon to Liddell Hart, 11 October, 1967, LH 2/2/61/42.
Moshe Dayan's aim of annihilating the enemy is revealed in an article of the Jewish Observer and Middle East Review. In spring 1964, there were political disputes in Israel over the conquest of terrain during the War of Independence. According to Ben-Gurion, Israel would have achieved more favourable borders if Dayan, instead of Yigal Allon, had already been in charge of operations during the War of Independence. However, according to this article Ben-Gurion had specifically refused Allon the opportunity of destroying the Egyptians

The strategy of the denial approach also influenced the operational concepts. However, the existing doctrine was already quite suitable for the prevailing situation. Besides, it even reinforced the political approach of denial. The military doctrine that had developed in the IDF before the 1956 War already quite unequivocally answered the question of how wars should be engaged in militarily. Therefore, the emphasis in development in the IDF was put on introducing new technology and weapons. Technical skills and training standards were continually raised, the air arm was developed and molded into an élite force, the intelligence services were extended, new techniques for deception were developed and mobilisation procedures were reviewed and refined.[340]

The only remarkable doctrinal change was to reinterpret the definition of pre-emption. The concept of decisive victory was linked to the doctrinal principle of pre-emption. Nevertheless, a self-evident fact the pre-emption became not although a principle to deliver the first blow whenever a threatening situation reveals was adopted. Even so, the maximum exploitation of military power for the attainment of decisive victory was compatible with the widespread belief that the Arabs would win a political victory if war ended in anything less than total military triumph for Israel. In addition, according to Handel the volatility of Israeli pre-emptive or interceptive strategies, offensive at both the tactical and operational levels, also made them more likely than others to trigger unplanned confrontations, to escalate and to even go to war.[341]

8.2. The rise of the Armoured Corps

This strategic framework put strict demands on the operational principles as well as on the organisation of the IDF. The conquest of terrain was not only a matter of strategic security, it was also a precondition for operational freedom of action in mobile warfare. As Brigadier Amit, Dayan's chief of operations, said of the need for terrain: "There was no possibility of manoeuvring forces over large areas as well as there was no question of temporarily giving ground to an advancing enemy in order to recapture it later."[342] In other words, the

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to get a better position in the post-war peace negotiations. Therefore, the core of the dispute might have been different views of the doctrine: Dayan's offensive and Allon's defensive. Allon was known for his settlement policy; to establish settlements in the border areas to protect the rest of the country, though this does not explain the entire concept. Before the Six Day War, Yigal Allon was one of the people who were responsible for creating the strategy and doctrine of the 1967 War.

[340] Bagnall, p. 35, Zamir, p. 11 and Heiman, Leo: War in the Middle East, p. 62.
According to Zamir, the reserve was organised territorially, so that in peacetime a unit's equipment was stored in the same areas where the men of the unit lived and worked. Usually mobilisation orders were distributed from brigade down to sections by messenger. Call-ups were also distributed by written orders and radio messages.

[341] Lanir, p. 22 – 23, Tal, p. 27 and Handel, p. 538.
Handel's statement came true in June 1967.

[342] Amit (1963), p. 37.

conquest of terrain, already made or achieved during the operation, gave not only depth to the defence but also possibilities and space for Israeli deep penetrations.

In his article *Israel's Defense Doctrine. Backgrounds and Dynamics*, General Israel Tal describes the preconditions of the Israeli operational doctrine. The foundation was the struggle of the few against the many. According to Tal, classic military doctrine, as is usually acknowledged, requires a quantitative ratio of forces of 3 to 1 in favour of the attacker. However, these classic military principles were correct only at the tactical and operational level and not always at the strategic level. In Palestine, the ratio of force to space (territory and length of borders) also had to be taken into account because the defender's forces had to be dispersed and spread out over three fronts, whereas the attacker could concentrate his main effort and apply the centre of gravity doctrine. Therefore, in the light of the saturation of space by enemy forces, it was, according to Tal, the defender who had to enjoy quantitative superiority at the national-strategic level. However, because Israel could not permit itself this luxury, this led the Israelis to a simple conclusion; the few had to adopt the principle of delivering the first blow and conduct an offensive rather than a defensive war. Without offensive operations, it would also have been almost impossible to reach the doctrinal aim of decisive victory. Besides, defensive war would have been exhausting and against the short war concept. Nevertheless, defence was not totally out of the question. General Tal notes that if offensive means were to prove impractical, then the alternative, the least of all possible evils, would be a flexible defence aiming to destroy the enemy's forces even at the expense of a loss of territory. In a way it seems, however, that Tal's article – although it analyses Israel's problem of being inferior in manpower – tries to make excuses for offensive doctrine. Up to the Sinai Campaign, for example, interior lines were seen as a particular advantage for the Israelis; a possibility of compensating for the problem of quantity.[343]

After the Sinai Campaign, a committee headed by Dayan's second in command and successor as Chief of Staff, General Laskov, was established to collect and study the lessons of the campaign. The most important recognition was that the IDF's main striking force would have to consist of armoured brigades in the future, though there were also still opinions that armour was not solely the property of tank commanders. Armour was seen as suitable for all Israeli conditions, although this was not, according to Shaul, the only possible choice. However, the quantity and quality of the enemies determined the decision. Tanks were seen as providing the flexibility that was needed while infantry was seen as too defensive against the enemies' mass. Thus, the outcome of the war, especially considering the performance of the armoured and air forces, was to accelerate the development of these branches, and

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[343] Tal, p. 35 – 37.

Saturation in space means that the force strength fills the battlefield with forces and, by doing so, prevents manoeuvring.

See also Ne'eman, Yuval: This War of Our Resolution and how to Safeguard its Achievements, p. 12.

According to Ne'eman, during the 1960s the operational theatre in the Middle East favoured the Israeli offensive doctrine; the armies on both sides were relatively small, and there was ample room for manoeuvre.

orders to develop the tactics of the armoured forces according to the experiences of the past war were given. In addition, tactical and operational lessons were drawn in particular from the battles at Abu Ageila. The lessons drawn pointed first and foremost to the need for enhancing the IDF's manoeuvrability and firepower yet again in order to achieve rapid and decisive victory in future conflicts.[344]

The most important person involved in the evolution of Israeli fighting doctrine between the 1956 and 1967 wars was General Haim Laskov. According to Luttwak and Horowitz, Laskov's ideas on organisation, doctrine and methods of command in mobile warfare were published in Israeli military journals and "formed the most comprehensive statement of Israeli military doctrine". In addition according to Brian Bond, Laskov shared "a firm belief in the value of the indirect approach as a guide to strategic thought" with Yigal Yadin and Yigal Allon, but he also played a vital role in introducing Liddell Hart's ideas on mechanised warfare to Israeli commanders.[345]

Liddell Hart's influence on Laskov's thinking can be seen in the correspondence between Laskov and Liddell Hart. Some three months after the Six Day War, General Laskov wrote to Liddell Hart as follows: "I think that one of the lessons amongst others that gave effect to armour is the one you mention in your *The Tanks*, volume two in your conclusion chapter. I made quite a drive to get people to read these books and discuss them, whatever

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[344] Lanir, p. 20 – 22, van Creveld (1985), p. 198, Cohen, p. 148, interview of Colonel, Doctor Shai Shau and IDFArc., file 35/727/1957, file 937/1034/1965 and file 13018/1034/1965.

See also Handel, p. 568, Dupuy (1992), p. 258, Asher, Jerry with Hammel, Eric: Duel for the Golan. The 100-hour battle that saved Israel, William Morrow and Company Inc, New York 1987, p. 177 and IDFArc., file 31/684/1962.

Handel mentions that one of the major sources of the IDF's military strength in the 1960s was learning lessons.

According to Dupuy, before the withdrawal the Central Sinai was thoroughly surveyed, mapped and photographed. In addition the Israeli Command and General Staff College conducted a detailed staff analysis of the battle of Abu Agheila every year after the 1956 War.

According to Ashel and Hammel, Moshe Bar Kochba's (Brigadier during the Yom Kippur War) battle at the Ruafa Dam in particular was studied for many hours by every Armour School cadet.

One of the divergent opinions on the future role of tanks was represented by the 11th Infantry Brigade which estimated that APCs and tanks would have accelerated its fighting ability if they only had existed. Another experience was that the brigade did not know how to fight in populated areas, which was also obviously the case for all the other brigades, excluding the paratroopers. Therefore it was highly suspicious whether the principle of massing tanks would also have been the right solution for fighting in all types of environment.

[345] Luttwak & Horowitz, p. 172 and Bond, p. 254.

See also van Creveld (1998), p. 164.

According to van Creveld, Laskov was the most professional and most educated Chief of Staff that the IDF had ever possessed.

you can say by way of critique – we are good disciples."[346] Several central principles of the successful use of armour in the past can be seen in the cited chapter. Most of the examples are from German tank warfare in WW II, as can be seen in the following list:

1. Flexibility in operational technique, which means a capability for cross-country movement in concentrated formations.
2. Connected to the previous point, an ability to engage and disengage tank formations swiftly from area to another. The holding of large tank formations in reserve is not flexibility.
3. Time-saving command methods including operational independence and advanced radio-telephony control.
4. The German *Blitzkrieg* techniques which, according to its developer General Heinz Guderian, were mobility, velocity and indirect approach on the enemy's rear areas. With a tactical combination of tanks and aircraft, the stroke in time and direction could be implemented unexpectedly and furthermore the exploitation of a tactical breakthrough leads to deep strategic penetration. Tactically, this breakthrough is a torrent-like process that seeks the enemy's weak points. Finally, variability of the thrust-points will paralyse and disperse enemy countermeasures and provide opportunities to maintain the initiative and tempo.
5. Defensive combination of tanks and anti-tank guns to lure the enemy into traps.[347]

The result of the examination of the Sinai Campaign was that Israel made a shift from the era of individual weaponry to the era of the crew-served weapons of modern warfare, as General Tal wrote in his article. In addition, a general tightening of control was also required to secure better co-ordination and prevent further misadventures between the air and ground forces and between the ground forces themselves in rapidly changing situations on the modern battlefield. However according to Shai, the rise of the Armoured Corps meant the loss of harmony between the arms. The day of motorised infantry fighting independently was largely over, which was more or less the case with paratroopers in airborne operations as well.[348]

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[346] A letter from Laskov to Liddell Hart 12 April 1959, LH 2/13 and a letter from Laskov to Liddell Hart, 20 September 1967, LH 2/13.

In the letter, Laskov tells Liddell Hart that he had studied and still studied Liddell Hart's books *The Tanks*. Laskov had got these books (two volumes) from Liddell Hart. They were, according to Laskov, "an aspiration to any student of war and weapons".

[347] Liddell Hart, B. H: The Tanks, volume two 1939 - 1945, Cassell and Company Ltd., London 1959. The pages of the book mentioned in Laskov's letter are 452 – 454.

See also Tiberi, p. 65 – 66. Tiberi's list of the fundamental principles of German armoured warfare are almost the same as Liddell Hart's list above.

[348] Tal, p. 27, discussions with Doctor, Colonel (ret.) Hanan Shai and interview of Doctor, Colonel (ret.) Meir Pa'il.

According to Shai, during Laskov's tenure as Chief of Staff the Training and Doctrine Department of the General Staff became tank-dominated and the balance between arms

8.3. From thoughts to practise; an application of the German lightning warfare concept

8.3.1. The birth of the "Constant Flow" doctrine

It is justifiable to say that the Israeli concept of armoured warfare came into existence with a blend of principles adopted from abroad – mainly from the Germans. Since then they have been applied on their own terms. The same is true with General Laskov, as Brian Bond notes, "evidence of Liddell Hart's influence is indirect". One is also justified in saying that the principles listed in *The Tanks* and applied by General Laskov are not just Liddell Hart's invention, although they also contain his ideas on combined arms warfare and indirect approach. Nevertheless, whatever the origins of modern tank warfare; they are not so significant in this context. Instead, it is important that the Israelis read Liddell Hart's texts and adopted an armoured warfare doctrine that was quite similar to the Germans from them.[349]

However according to Bond, Laskov admired Liddell Hart's ability to express tactical ideas in simple language suitable for instructing troops. He also thought that Liddell Hart had expressed the importance of continuous movement in battle better than any other theorist. Nevertheless, the old ideas of manoeuvre, as updated to reflect 20th century military technology by Liddell Hart, coincided with Laskov's thoughts. They were also well matched to Israel's environment and doctrine. Therefore, one can agree with Bond when he says "it seems reasonable to associate Liddell Hart's name with Laskov's doctrine." In addition, some people also tend to see Montgomery's influence in the background of the Israeli art of war; including Liddell Hart who said "the Israelis had carefully read his indirect approach as well as experiences of both the German and Montgomery's armoured warfare, and then applied them with heart" in an article in Israel Today and the Jewish Times. However, it is difficult to show which particular principles of the Israeli military art have their origins in Montgomery and which in the Germans. The joint and independent operational command in a front or a theatre – including the services – is often only connected to Rommel, but it can also be connected to Montgomery. In

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was only achieved in the 1980s when the ground forces command was established. According to Pa'il, Laskov was a tank addict.

[349] Bond, p. 246 and 260.

See also a letter from J. L. Wallach to Liddell Hart, 29 November 1967, LH 2/22 and a letter from David Kessler to Liddell Hart, 14 May, 1969, LH 15/5/304, part 2.
In his letter to Liddell Hart, the editor of The Jewish Chronicle, David Kessler, tells of an interview with David Ben-Gurion that was conducted by a student named Mordechai Oren. One of the questions presented to Ben-Gurion was a question about the *Blitzkrieg* doctrine. Oren was interested in the Soviet Union's statement that the Israelis had adopted their doctrine of the Six Day War from *Nazi* Germany. According to Ben-Gurion, the *Blitzkrieg* doctrine was a technique, not a strategy for aggression against another country. It was used because it was a technique of modern warfare, no matter where it was from. When Oren continued "We learned from the British and the Germans, so ZAHAL (= IDF) learned from Liddell Hart and Fuller?" Ben-Gurion answered "True, very much so". However, some Israeli scholars have considered the comparison of Israeli armoured doctrine to German *Blitzkrieg* doctrine strange and have preferred the term "lightning war". For example, Wallach says that "the word *Blitzkrieg* always arises uneasy associations with Hitlerism". Nevertheless, the source of this association is mainly emotional; the meanings of the words are the same.

addition, Rommel is known to have stressed delegated decision-making, but Montgomery also stressed this from the mid-1920s. Only the tendency towards deep armoured penetrations seems to be more German than British (or anybody else).[350]

At the end of the 1950s, the results of the re-evaluation process of the fighting doctrine started to bear fruit. The ideas of the mobile infantry school were abandoned and the thoughts of the manoeuvre school and the armour school formed the basis of the armoured warfare doctrine. The revised doctrine was based on an offence of the armoured forces, supported by the air force and with intelligence suited to this purpose. Above all, the doctrine underlined pre-emption at the strategic level; a decisive breakthrough aimed at deep penetration and long-range pincer-movements at the operational level; and sudden strikes, raids and surprise action at the tactical level. These guidelines also necessitated changes in the IDF's operational principles, in command processes and in organisation.[351]

Since the late 1950s, during Haim Laskov's tenure as Chief of Staff, when the aim to favour mobile operations was still growing, the Israelis adopted a new operational concept. According to this, troops constantly on the move would be safe while solid fortifications would be in danger. This led to a situation where the IDF, at least partly, abandoned the idea of trench warfare and static defence, including fortification preparations. The only exception to this concept was the territorial defence system that had already been developed after the War of Independence. As a matter of fact, the Israelis even built new agricultural settlements according to Yuval Ne'eman. However, these fortifications also served mobile operations. Settlements formed, as they had done earlier, a firm base for offensives and new settlements provided a better defensive position to contain enemy penetrations.[352]

Heiman calls the new operational concept by the name of the "Doctrine of Constant-Flow Action". According to him, it was a synthesis of the ideas of

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[350] Bond, p. 59 and 260, Hamilton, p. 174, 322, 459 and 461, Young, p. 60 – 61, Rippe, Stephen T: Leadership, Firepower and Maneuver: The British and Germans, Military Review, October 1985, p. 33 – 34, Fascinating Files of Liddell Hart, Israel Today and the Jewish Times, September 1, 1967, LH 15/5/315, part 2, p. 6 – 7 and Rees-Mogg, William: The faith and the army, The Times 17.2.1970, LH15/5/315, part 1.

[351] It may be a coincidence but at this time, in the beginning of 1960, Liddell Hart visited Israel and gave lectures at POUM (*Pikkud U-mateh*, the Command and Staff College).

See a letter from Liddell Hart to Yuval Ne'eman (at that time Israel's Military Attaché in London) 7th December 1959, LH 2/18.

The letter that Liddell Hart sent to Colonel Ne'eman contained the topics of Liddell Hart's planned lectures for the senior rank officers and student officers in *Poum*. These topics are interesting: The Future of Armour, The Future of Infantry, Organization of Forces for Rapidity and Flexibility of Command and Manoeuvre, Attack and Defence - their Comparative Power, The NATO Defence Problem in Europe, How Military Ideas have Shaped the Course of World History, The Possibilities and Problems of Limited War, The Dangers of Dogmatic Doctrine - as Illustrated by the Course of French Military Ideas before WW I and again before WW II and The Elements and Characteristics of Military Genius.

[352] Heiman, Leo: Israeli Army's Strategical and Tactical Doctrine, An Cosantoir, January 1965, LH 15/5/307, p. 47 and Ne'eman, Yuval: This War of Our Resolution and how to Safeguard its Achievements, p. 11 – 12.

Generals Haim Laskov, Yitzhak Rabin and Avraham Yoffe. In Heiman's manner of thinking, this doctrine consisted of all activities behind the planning and implementation of Israeli operational doctrine while Rothenberg and Luttwak and Horowitz limit the concept of "Constant Flow" to only logistical principles in mobile warfare. According to them, "Constant Flow" was meant to push logistic support in mobile warfare to the forward lines in a constant stream without waiting for specific requisitions. In any case, it seems that the concept of mobility was not limited only to practical matters but can also be found behind the mental mobility at a planning level as well as behind the principles that pursued operational and tactical mobility. Therefore, although Heiman's definition of the "Doctrine of Constant-Flow Action" was not an officially proclaimed doctrine, the name can justifiably be used to describe the IDF operational doctrine that was developed in the late 1950s/early 1960s.[353]

The basic pillars of the "Doctrine of Constant-Flow Action" were very similar to the German *Blitzkrieg* doctrine. According to Leo Heiman, they were defined as follows:

- Unconventional and unorthodox thinking, planning, and execution. Much more important than movement *per se* was mobility of the mind, which above all meant thinking several moves ahead of the enemy according to the situation. According to the Israelis, calculated planning could not be extended further than the deployment of troops and the general guidelines of logistical support.[354] Planning was necessary, but the development of a

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[353] Heiman (1965), p. 47 and 49 – 50, Rothenberg, p. 120, Luttwak & Horowitz, p. 175 and le Mire, appendix n:o 1.

This study defines the "Doctrine of Constant-Flow Action" as the entity behind the pursuit of operational mobility since the late 1950s. In addition, by naming the doctrine according to its substance it is easier to handle the large number of different things connected to it. The "Doctrine of Constant-Flow Action" should not be confused with the more limited logistical concept of "Constant Flow".

Laskov was appointed to the position of Chief of Staff after Dayan in 1958. Before that he served both as Chief of the Armoured Corps and as Chief of Operations. Yitzhak Rabin was responsible for the development of the doctrine up to 1958 and was later appointed to the post of the Chief of Staff in 1963. General Avraham Yoffe was responsible for the development of the doctrine at the end of the 1950s.

According to Luttwak and Horowitz, it was the head of the Logistics Branch of the General Staff, Brigadier Matityahu Peled, who introduced and modified the American "Constant Flow" system of logistics to the IDF.

[354] See also Kahalani (1994), p. 409 – 411.

Kahalani states that the slogan "every plan is a basis for changes" has usually been incorrectly understood. The common conception is that the Israelis don't use planning in their operations and therefore changes to operational orders are quite common. According to Kahalani, planning has been included in the Israeli command process and becomes more important the higher decisions are made. In this concept, changes should have been avoided, but if changes are required, the existing plan is the common foundation for these changes. The already existing and understood guidelines provide the subordinates with a base to understand the changes and their effect on the future. Without enough planned guidelines, troops would loose time due to the changes. As a matter of fact, in some cases changes have been very rare; for example, during the Six Day War, where Kahalani served as a company commander. Kahalani reveals that he understood the tasks and the goals of

situation could not be foreseen. When battles began, responsibility for operations was delegated to independent task forces. Therefore, general guidelines would be enough to provide direction for the decisions of the lower echelons. Heiman calls this "fluid mobility where the attacking force must resemble a flood of elusive quicksilver. Columns of varying sizes and constantly changing component units will by-pass the enemy and move on without being dragged into a prolonged battle." In addition, indirect action was stressed; i.e., flanking attacks, infiltration and attacks from the rear. This manner of thinking can be interpreted as being parallel to the contents of the "Strategy of Indirect Approach" and the concept of the "expanding torrent". In addition this parallels manoeuvre warfare theory, in which the planning process only starts after the use of success and in the pursuit phase; otherwise battles of attrition were to be avoided[355].

- Follow the line of two alternatives to deceive the enemy's top command about what the real strategic-operational aims of the attacking forces are. This had already been central in Israeli doctrine in the Sinai Campaign and according to this the emphasis on surprising the enemy with deception was further strengthened.
- Prepare two or more alternative sets of plans so that if something goes wrong or the offensive slows down, the attacking force could be switched over to the alternative track without any delays or confusion.
- Moral blows (confusion, chaos, a stunned state of mind) were considered to be just as important as physical blows on the battlefield. On the other hand, territorial conquests were not considered important objectives or worthwhile gains. According to this principle, it was assumed that the only worthwhile gain to be pursued was the ultimate disintegration and disruption of enemy armed forces, which could be achieved by physical and/or moral damage inflicted upon the enemy army.[356]

Unconventional and unorthodox thinking, planning and execution were the most important principles of the "Constant Flow" and the "red thread" to Rabin, who later was responsible for planning the Six Day War. This can be seen as being derived from Wingate and PALMACH. According to Yuval Ne'eman, Rabin and his staff continued and developed the organisational doctrines received from Yadin, and combined them together with the principles of Dayan. Yadin, Dayan and Rabin had all been Wingate's subordinates, and Wingate was especially known to have been a keen advocate of surprise and unorthodox planning. Brian Bond confirms this. In addition, Rabin himself mentioned Liddell Hart's name in this context. According to Rabin, Liddell Hart's doctrine of the indirect approach coincided with Israel's choice of methods, and had helped in providing the Israelis with a theoretical justification

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his superiors and during that war he was informed only by virtue of the briefings and orders given him before the war.

[355] Leonhard, p. 112.

[356] Heiman (1965), p. 49 – 50.

and elaboration of their strategy, which was designed to overcome her inferiority to her enemies.[357]

Rabin emphasised the mobility of the mind, the ability to think several moves ahead of the enemy, react instantaneously, and take risks along the way. His basic principle was surprise, which was, however, reached by plans that struck the very root of established military concepts, theories and thinking. This strengthens Bond's view that the origins of Rabin's thinking lie more with Wingate than Liddell Hart. According to Rabin, operations that were successful in the past must not be tried again. This was also one of the principal reasons why Israeli generals were rotated at regular short intervals to maintain fresh operational minds at the top. In addition, this manner of thinking has similarities with Clausewitz's thinking. According to Clausewitz, "today armies are so much alike in weapons, training, and equipment, that there is little difference in such matters between the best and worst of them... Even the senior generals – divisional and corps commanders – have, as far as their efficacy is concerned pretty much the same views and methods. The only remaining factor that can produce marked superiority, aside from familiarity with war, consists of the talents of the commander-in-chief."[358]

Interestingly, General Tal also wrote about the question above in 1978 when he analysed the IDF's past, and in many ways in lines that paralleled Clausewitz. According to him, purely from the materiel point of view, a regular army would always be superior to a militia army because, in theory, mobility was a function of the quality of the equipment. In the early 1960s, this was still mainly beyond Israel's economic and demographic resources. This seeming deficiency could, however according to Tal, be compensated for by the advantages of militia; the most important of them being the mental elements of motivation, initiative, daring, flexible thinking and improvisation. Despite the similarities, Tal's writing can not, however, be directly linked to Clausewitz. In the article, his name or influence is not mentioned. Instead, Doctor Shai tends to see Clausewitzian influence behind the Israeli military art during the 1960s. According to him, this can be seen in ingenious thinking that emphasised the mental aspects of the leadership process. In other words, the talents of the commanders, and flexible command, consisted of management, cognitive issues and principles that supported the command process.[359] Although Shai doesn't stress the technical improvement of the IDF, it can be said that during the late 1950s and early 1960s the IDF invested in both the qualitative issues

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[357] Ne'eman, Yuval: This War of Our Resolution and how to Safeguard its Achievements, p. 6 and Bond, p. 248.

In the early 1950s, Rabin studied at the British Staff College in Camberley. His connection to Liddell Hart originated from this.

[358] Ibid., Luttwak & Horowitz, p. 175 and Howard & Paret, p. 282.

See also Lind, p. 7 – 8.
Ideologically, German General Herman Balck favoured similar operational lines as Rabin. Lind names Balck as one of the most successful practitioners of manoeuvre warfare, according to whom there can be no fixed schemes in operations, situations are not identical, never do the same thing twice.

[359] Tal, p. 37 and discussions with Doctor, Colonel (ret.) Hanan Shai.

Prussian General Staff, which also forms a link to the German command system.

There are also still other links to the Germans. Doctor Shai mentioned that several German Jews, the most important of them being originally an Austrian Jew – Fritsch Eisenstadt – interpreted German tactics for Jews in the first *Haganah* officer course in the late 1940s. Already at this time some ideas of the German *Auftragstaktik* were presented to *Haganah* and PALMACH. Later in the late 1950s and early 1960s the chapters of Liddell Hart's *The Tanks* that Laskov introduced to Israeli officers also dealt with the German command system. It is highly likely that these issues were discussed in those circles that developed the "Constant Flow" doctrine. In addition Ariel Sharon, who studied in 1957 – 1958 at the British Staff College in Camberley, wrote a research work entitled *Command Interference in Tactical Battlefield Decisions: British and German Approaches* that dealt with methods of command on the battlefield. However, the degree of Sharon's influence on the "Optional Control" principle in its early existence remains unclear, but later on Sharon was the Head of the Training Department for a short time before and for a longer time after the Six Day War and obviously rooted his ideas at least in his subordinates' thinking. Another interesting detail is that Liddell Hart helped Sharon find the sources for his essay, and in this way could have influenced Sharon at least indirectly. Therefore, Pa'il's statement that Israeli "Optional Control" was a derivative of the German *Auftragstaktik* complemented with British asymmetry seems to be justified.[361]

In the "Optional Control" concept and in *Auftragstaktik,* the principal idea was delegation of decision-making; commanders would not lead their troops in battle with strict orders from a higher echelon, but with the overall operational scheme of their superiors. In addition, the Israelis based their chain of

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[361] Interviews of Colonel, Doctor Shai Shaul and Doctor, Colonel (ret.) Meir Pa'il, discussions with Doctor, Colonel (ret.) Hanan Shai, Sharon, p. 160 – 161 and Ariel Sharon's correspondence with Liddell Hart in 1958; letters from Ariel Sharon to Liddell Hart 16 September, 29 September and 15 October, 1958, LH 2/21, letters from Liddell Hart to Ariel Sharon 20 September, 10 October and 13 October, 1958, LH 2/21.

Fritsch Eisenstadt also served in the *Wehrmacht* and the Jewish Brigade. He mostly had an effect on infantry tactics. The era of Jews who had served in the *Wehrmacht* was, however, rather short in the IDF as was obviously their influence.

When Liddell Hart and Sharon met, Liddell Hart suggested that Sharon read Guderian's and Manstein's *Memoirs* and the *Rommel Papers* in addition to his books *The Other Side of the Hill* and *The Tanks.* According to Liddell Hart, "direct control", the concept of the commander being in the centre of the battle, was a prime cause in Rommel's success. Sharon, for his part, mentions that Liddell Hart's unconventional thinking has affected a lot of the IDF, and that he was also strongly in favour of Liddell Hart's ideas.

In addition to Sharon, other Israeli senior officers – including Dayan, Laskov and Rabin – also studied in Camberley.

Pa'il also mentioned that quite generally the Israelis tend to see that during the past two centuries the German army has been the best armed force. Although Pa'il agreed about the performance of the Germans, in his opinion the British have been still better because they have been able to learn and adapt themselves according to the challenges of the battlefield.

Also interview of Lieutenant General (ret.) Dan Shomron.

General Shomron tends to also see Fuller's thoughts on the command process in mobile warfare as being behind Israeli applications. A link between "Optional Control" and the German *Auftragstaktik* can also be seen here.

information on accurate reporting, which, regardless of whether it was good or bad news, made it possible to evaluate critical factors of the battle realistically. Tactical and operational reconnaissance also held a central place; with "recon-pull" tactics it was possible to find possibilities for taking advantage of an enemy's weaknesses. This manner of thinking was seen as being absolutely necessary in the always changing situations in mobile warfare. It was also seen as the only way of maintaining initiative and tempo.[362]

To accelerate the decision-making process, Israeli task-force and unit commanders were only given general directives and expected to carry out their assigned missions by using their own judgment and initiative. The subordinates were trained to act according to the will of the commander, according to the "spirit" of the commander or according to the aim, and not only according to the task. Doctor Shai explained that this meant that subordinates in the IDF could, contrary to the German system, also change their task if the situation required it and if this change still fulfilled the commanders will or aim. According to Simpkin, nevertheless, the German subordinate commanders were also free to modify the task set for them. Thus, the real difference between *Auftragstaktik* and "Optional Control" seems to be rather slight. In any case, in the Israeli concept a force got its task, which could be a determined area of operations or direction or a concrete thing like capturing, for example, a certain ridge line that would form a part of the aim to destroy the enemy's reserves. The "recon pull" principle held a central place. The actions of the sub-units took shape according to an understanding of the aim and the situation on the battlefield. Subsequently one's own role in this entity was carried out independently, by understanding the spirit of the aim or the commander's will. In this context, the subordinate could change his original task if some other course of action better fulfilled the aim. In 1960, General Rabin summed this up by saying that "commanders and headquarters of armoured forces must be able to gather intelligence, process it, prepare orders, and issue them while on the move." With this aim, commanders were given daily, even hourly, objectives to attain; but only the objective or aim was important, how they would achieve it was their own business. Nevertheless, in this process superiors also had a possibility of exercising their optional control – that means passing over their closest subordinates to give additional orders straight to sub-units if it was necessary for the aim – but the unit commanders were still expected to act independently. In this latter case, the subordinates were, anyhow, responsible for reporting back continuously, but they did not have to wait for orders before making their command decisions – as in the classic two-way system. In addition, this type of command system didn't

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[362] Sternberg, Charles A: The Arab-Israeli Six Day War of 1967: Essential Elements of Operational Art, Naval War College, Newport RI June 1995, p. 11.

Sternberg quotes Colonel Gary D. Payton's (USAF) article in the Airpower Journal in Winter 1993 in his study. Payton calls Israeli truthful reporting "intellectual honesty". This means that the commander can not be left uncertain about what is an estimate and what is an opinion. Therefore, the task had to be approached honestly with an open dialogue. This will ensure that the correct decisions are made. During the early days of the Yom Kippur War this system didn't work.

overcrowd the command posts and staffs; rather they maintained their mobility.[363]

Although not a new way of thinking for Israeli commanders, the "Optional Control" process put demands on them. In the officers' selection process, emphasis was put more on intuitive thinking than on the technical skills of a super-soldier. According to van Creveld, commanders were trained in a manner to make them as little dependent on their superiors as possible in deciding how to act. Officers were taught that neat battle plans would invariably break down, the enemy would behave unpredictably and their own forces would never fight quite as planned. Therefore instead of trying to overcome confusion by regrouping after each breakdown, Israeli commanders were trained to keep their forces fighting and moving in the right direction. This all further strengthened the offensive spirit of the Israeli officer corps; the principle "when in doubt – attack" was adopted as a solution to communication gaps and moments of uncertainty.[364]

According to Leonhard, the critical problem with *Auftragstaktik*, and "recon pull" in particular, is that the ability to do it well is an unnatural one. The control of the uncertainty could, however, be tightened with training and managerial arrangements, and this was exactly what the Israelis did in the early 1960s. During 1962 – 1963 Colonel Meir Pa'il wrote a philosophical field manual that can be translated as "Combat Doctrine". This book – which was classified as "confidential" or "restricted" – was introduced in 1964 and was the only IDF manual that dealt with doctrinal issues up to the 1990s. According to Pa'il, this manual can be classified as treating both the tactical and operational levels of warfare. It also contained a historical framework of Pa'il's interpretations of such classics as; for example, Jomini, Clausewitz, Fuller, Liddell Hart and Miksche. The text was written to be "as eternal as possible" because the problem of all manuals and doctrines was to see into the future, and therefore his own experiences in the past played a central role in "Combat Doctrine". On the whole, this manual, in a way, confirmed the thinking behind the "Constant Flow" doctrine.[365]

The basic idea of "Combat Doctrine" was to teach Israeli officers to understand their superior's aim. Important in this context was the development

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[363] Rothenberg, p. 120, Luttwak & Horowitz, p. 162 – 163 and 172 – 173, Heiman (1965), van Creveld (1985), p. 199, Gissin, p. 325 – 327, discussions with Doctor, Colonel (ret.) Hanan Shai and Simpkin, p. 232.

[364] Van Creveld (1985), p. 199 and Luttwak & Horowitz, p. 175.

The slogan "when in doubt – attack" was used by the later Chief of Staff Lieutenant General Mordechai Gur.

According to Luttwak and Horowitz, detailed tactical plans might have, however, been made but they were not binding.

See also Zamir, p. 11.

According to Zamir, the Israelis continuously tested their fighting doctrine in exercises; first minor tactics to ensure that sub-units could carry out their role and then battalion or brigade training. In addition, they also had skeleton exercises for officers and N.C.O.s.

[365] Leonhard, p. 116 and interview of Doctor, Colonel (ret.) Meir Pa'il.

When Pa'il wrote the manual, he was the Head of the Doctrine Department in the General Staff, IDF.

of the ability to analyse an enemy's course of action and then one's own situation in the framework of aim, terrain, weather, and the problem of time/space in movement. Several principles of war – like maintenance of aim, surprise, concentration and security – were also introduced because they formed a base for systematic thinking, as was already discussed in the second chapter. Even so, the learning of a long list of the principles of war was seen as making officers "close-minded". Instead, because it was obvious that decisions did not get carried out as planned, open-mindedness was emphasised and subordinates were supposed to take the initiative independently. Pa'il calls this appreciation of the situation a combination of good planning and improvisation which, according to him, was the central secret of Israeli operational art. The second secret was indirect approach, which was, according to Pa'il, one of the main factors behind surprise. This was also written into "Combat Doctrine" and in this way links unconventional thinking to the operational principles of the IDF. In addition, the importance of reconnaissance at all levels in the context of independent decision-making was stressed in this manual because it enabled continuous movement.[366]

"Combat Doctrine" was also a base for several other manuals that were published before the Six Day War. One of them was, according to Adan, the first theoretical manual of the Armoured Corps, which was also introduced in 1964. This manual dealt with such issues as how armoured forces should be used in offence, defence, breakthrough battles; daytime, at night and in different geographical conditions. Until this time, the manuals of the armoured forces had been orders that dealt with technical issues about tanks and their battle techniques. In addition, according to Adan, at this time other manuals were also written in the Training Department of the General Staff, IDF, including for infantry.[367]

On the whole, it seems that the IDF was able to find some clarity in the "fog of war" already during the early 1960s. The Israeli concept of a command and control system also seems to have been strikingly similar to the manoeuvre warfare theory that was, however, created only a decade later. While manoeuvre warfare theory stresses mission tactics, standardised interfaces between different command and control posts – including streamlining the responsibilities of fighting troops and support troops, the use of command post and staff procedures, and communications technology to be faster in the decision-making process – the Israelis invented all these already before the Six Day War.

8.4. Discussions of organisations

Organisations were also revised after the Sinai Campaign. The General Staff was organised somewhat like the Supreme Headquarters of Allied European Forces (SHAEF) during WW II. According to Shai, this was a consequence of General Rabin's studies at the British Staff College in Camberley. The purpose

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[366] Interview of Doctor, Colonel (ret.) Meir Pa'il.

[367] Interviews of Major General (ret.) Avraham Adan and Colonel, Doctor Shai Shaul.

was to have a joint supreme command with three territorial theatre commands, with the air force and the navy as subordinates. According to Yuval Ne'eman, the difference from SHAEF was that the air force and navy functioned with a sort of split-personality: They were commands but, since they had more independence than the other branches, they were also part of the General Staff as "Super Special Staff bodies in the American sense", as Ne'eman notes. In the late 1950s and in the 1960s, when the authority questions were solved, this duality wasn't, however, a problem anymore. Territorial commands below the General Staff level were designed to be able to be in charge of three to six divisions. In addition, the functionality of the chain of command was tested in the great manoeuvres of 1960, directed by the Chief of the General Staff Division, Yitzhak Rabin, and thereafter tests were continued in annual exercises.[368]

At the operational-tactical level, the Israelis were still considering three organisational choices at the end of the 1950s: Whether they should have divisions divided into brigades; only brigades with the three territorial commands playing the role of both the corps and division levels in addition to their area responsibilities; and both independent brigades and a number of divisions. The solution that was chosen was a modified *Ugdah*. The decision was based on three facts. The first was the growth of the mobilised strength; this necessitated a better functioning tactical-operational headquarters between the will of the Chief of Staff and the brigades. The second was the need to guarantee the concentration of power and the need for continuity. This was obviously a consequence of the difficulties with mass forces in the Sinai Campaign. The third fact was the need for flexibility. Therefore, some auxiliary units were transformed from brigade level to divisional level to relieve brigades of maintenance responsibilities and to enforce the primacy of the combat mission. Seemingly this decreased the status of brigades, which were still seen as the primary force. In practise, nevertheless, various combat tools could be integrated into the assault echelons at every level in accordance with their task. This, for its part, shows that ideologically the changes were rather slight and at this time the brigades – although they were kept as tactical formations – were still also able to implement operational tasks. On the whole, it can, however, be estimated that the organisational changes that were made improved at least the co-operation inside the *Ugdah*s and as a consequence of this also the possibilities of concentrating forces.[369]

According to Yuval Ne'eman, the Israeli *Ugdah* looked somewhat like corps headquarters used to look in WW II. True, it had certain similarities, especially to the German divisions and corps, although Israeli organisations contained

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[368] Zamir, p. 2 – 3, van Creveld (1998), p. 169 – 170 and discussions with Doctor, Colonel (ret.) Hanan Shai.

The British had rather a lot of experience with joint staff procedures from WW II.
After his return, Rabin was placed in the post of Chief of Operations.

[369] A letter from Yuval Ne'eman to Liddell Hart, Office of the Military, Naval & Air Attache 90-4/667, 1 March 1960, LH 2/18, p. 2 – 3, Avidor, p. 65 – 66 and 68 – 69, Luttwak & Horowitz, p. 176 and Gawrych (1990), p. 69 – 70.

fewer men and were less fixed. In addition, the foundation behind the emphasis on flexible organisations was the same. Flexibility was needed to achieve operational freedom in an unorthodox manner. Nevertheless, there already were conversations whether a division should also be more organic in order to achieve good routine and co-operation in the early 1960s in Israel. Already after the Sinai Campaign, it was suggested that three permanent armoured *Ugdah*s be created; one for each territorial command. The tasks of the *Ugdah*s were defined according to the experiences of the Sinai Campaign that furthermore were connected to the experiences of armoured warfare elsewhere. According to this, the armoured formations would form an independent striking power that would be able to breakthrough, follow the successes and cut the enemy lines of communications. The term "fist ability", which before the Six Day War was beginning to describe the role of the armoured forces in the IDF, also appears in this context for the first time. At this phase the proposal was not, however, implemented but, in any case, the emphasis on more fixed combinations can already be seen in the early 1960s when the Armoured Command formed the nucleus of a divisional command. It was the only regular command of this type at the time.[370]

In the late 1950s and early 1960s, the *Ugdah,* with its auxiliary units, formed a framework for two or more different types of brigades (infantry, parachute, mechanised and armoured). The emphasis on armoured *Ugdah*s, however, also prevailed in the early 1960s. Those *Ugdah*s that were committed to the Six Day War were quite generally called armoured divisions despite the fact that some of them consisted more of other types of brigades than armoured ones. However according to Pa'il, on the whole the amount of infantry on foot that would have been needed in terrain that was pathless and impassable for vehicles was in decline and in some *Ugdah*s was totally absent. Brigades were still organised in a triangular style, though support echelons were often transferred to the divisional level. However, brigades could also be reinforced

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[370] A letter from Yuval Ne'eman to Liddell Hart 1 March 1960, p. 2 – 3, Avidor (1978), p. 68, Zamir, Meir: The Structure of the Israeli Army (1968), p. 10, IFDArc., file 35/727/1957 and file 937/1034/1965.
The proposed organisation of the armoured *Ugdah* was as follows: an armoured reconnaissance battalion, three light and medium armoured battalions, an assault battalion, two mechanised battalions, two motorised battalions, an artillery and anti-tank regiment, an engineer regiment, a signals battalion, a quartermaster battalion and several auxiliary units. Despite this seemingly heavy organisation, this suggestion was seen as being more flexible than the *Ugdah*s of the Sinai Campaign. Instead, the headquarters staff, which was divided between the main and rear headquarters, was rather thinly manned, especially the main which consisted of a commander, operations officer, tactical staff for reconnaissance and commanders of different arms. It was estimated that the IDF could establish three *Ugdah*s of this type; the first from the 7th Armoured Brigade and from the 4th, 8th, 10th or 12th Infantry Brigade, the second from the 27th Mechanised Brigade and 1st Infantry Brigade and the third from the 37th Mechanised Brigade and from the 2nd or 9th Infantry Brigade.
The idea of constructing the armoured division from separate battalions that, later, could form brigades reflects the American concept at that time. On the whole, the organisation of the armoured *Ugdah* had strict similarities to the concept that Guderian presented in his book *Achtung – Panzer!* in 1937.

with additional combat and support troops, as had been the case before the 1956 War.[371]

8.5. The Armoured Corps in charge of the development of ground forces

Beginning in 1956, there was a great increase in the armoured forces, which were seen as providing the most effective means of implementing the doctrine. This put the Director of Armour on an equal footing with the commander-in-chief, ground forces: an echelon that did not exist in Israel at the time. The Director of Armour was to co-ordinate and supervise the joint tactical training of armoured, infantry, artillery, engineer and logistics units. According to Gunther Rothenberg, the three commanding officers of the Armoured Corps between the Sinai Campaign and the Six Day War, Generals Haim Bar Lev, David Elazar and Israel Tal shared the belief that armour could win the war alone. Each of these three men made their own different contributions to the armoured doctrine: Bar Lev developed the organisation necessary to deploy massive tank formations, Elazar devised new doctrine and acquired the much needed new equipment and Tal perfected the doctrine and raised maintenance and gunnery standards.[372]

During the Sinai Campaign, Israeli armour doctrine relied on manoeuvre above all: tanks should not be used in direct assault. In the mid-1960s this was reversed. According to Gunther Rothenberg, the application of the Soviet fighting doctrine that Israel's enemies were supposed to apply was behind this development. According to the Soviet "Shield and Sword" doctrine, defensive lines blocking the major axes of advance formed the "shield" and the offensive element of armour in depth was the "sword". Therefore the Israelis presumed that enemy defences could no longer be bypassed without major clashes with the enemy. After considerable study by the committee headed by Colonel Avraham Adan, the Armoured Corps revised its tactical and operational methods. The shock effect came first, while speed was not seen as being so important anymore. Emphasis was put on massive daylight assaults on a brigade or even divisional scale. Nevertheless, even then the shock effect – in Luttwak's and Horowitz's words massed tanks operating as a mailed fist – was not planned to be used only in frontal attacks. A mailed fist meant striking deep into enemy territory with massive concentrations of armour and throwing them

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[371] Gawrych (1990), p. 69 and a letter from Liddell Hart to Brigadier Zamir (Israel's Defence Attaché in London) 6 October 1967, LH 2/25, a letter from Brigadier Zamir to Liddell Hart 24 October 1967, LH 2/25, IDFArc., file 35/727/1957 and interview of Doctor, Colonel (ret.) Meir Pa'il.

An Israeli infantry brigade consisted of three infantry battalions and a regiment (battalion) of heavy mortars. An armoured brigade consisted of two tank battalions and one battalion of mechanised infantry.

See also Dupuy (1992), p. 338.

Dupuy, among others, calls the *Ugdah*s of the Six Day War armoured divisions. As a matter of fact, most of them can be seen as having been armoured divisions, but not all. For example, Brigadier Ariel Sharon's *Ugdah* consisted of three brigades and auxiliary units; of the brigades only one was armoured.

[372] Zamir, p. 10, Rothenberg, p. 121 and Bagnall, p. 195.

off balance, or out-manoeuvre as Pa'il puts this, rather than advancing along a wide front and establishing firm lines of communications. This concept was quite similar to the German concept in WW II and very near to the concept of the "expanding torrent" as well. The tendency to apply indirect approach methods; exploitation of psychological shock, maximum mobility and the simultaneous disruption of the enemy defences at many points were also maintained, but the main objective of the tanks became the enemy's tanks.[373]

The new fighting doctrine also required changes in operational principles, in the battle techniques of the tank crews and in equipment. Battlefield mobility was redefined as the ability to move on the battlefield in the face of hostile fire. A central reason for this was the improvement of both the quantity and quality of tanks. However according to Luttwak & Horowitz, most Israeli officers were attracted at the time by the fast-tank concepts current in Europe. In any case, General Tal preferred the slower but more heavily armoured *Centurion* tanks over lighter and more mobile vehicles. Although some of Tal's ideas ran contrary to the conventional wisdom of armour officers in Israel and abroad, Tal's view led to the purchase of the quite slow but strong *Centurion*s, which were able to manoeuvre in the presence of enemy fire. Like the British compromise in favour of battlefield mobility for heavier tanks at the expense of speed, the Israelis also preferred the tank more for its protection and operational range than its speed.[374]

The second change was in the skills of the tank crews. This was a result of an exchange of tank gunfire on the Syrian border in 1964. In this fire-fight, which lasted almost a whole day, the Israelis were unable to destroy any Syrian tanks. According to Samuel Katz, this was a consequence of the philosophy of Israeli armoured warfare; reaching the target had been half the battle and while this was learned, the art of gunnery had been overlooked. General Tal ordered a stop to "macho" style "hit-or-miss" techniques, and a

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[373] Rothenberg, p. 123, Luttwak & Horowitz, p. 91 – 92, van Creveld (1998), p. 160 and interview of Doctor, Colonel (ret.) Meir Pa'il.

See also Churchill, Randolph and Winston: The Six Day War, Sunday Telegraph, July 9, 1967, LH 15/5/315, part 2, p. 7.
According to the Churchills, it was Yitzhak Rabin (Chief of Staff during the Six Day War) who used the phrase "mailed fist".

[374] Rothenberg, p. 121 and 124 – 125, Luttwak & Horowitz, p. 190 – 191 and Bond, p. 254.

Before the 1956 War, the tanks were to follow on transporters and their crews in buses. According to an interview of General Laskov by Brian Bond, battle speed had been equated directly with vehicle speed.
See also Bagnall, p. 203 – 205 and Farris, Karl: Growth and Change in the Israeli Defence Forces Through Six Wars. U.S. Army War College, Carlisle Barracks, Pasadena 1987, p. 38 – 39.
According to Bagnall, the Israelis thought that a tank with an extended range is equal to 1.5 or 2 tanks of a lesser capacity. In addition, they placed a special premium on tanks (like the *Centurion*) that had 20 tons more armour steel than the Soviet-made *T-54*'s and *T-55*'s. According to Bagnall, the Israelis also considered some sophisticated Western tanks to be too complex and unreliable for the battlefield environment. This opinion was later changed when the *Merkava* tank was built, though technical reliability had also improved by then.
According to Farris, the IDF had some 250 *Centurion*s, 200 *M-48 Patton*s, 200 modified *Sherman*s and 150 *AMX* tanks before the Six Day War.

greater emphasis was put on effectively using the optimum range of long-range tank guns. According to Katz, this led to the era of *Tzalaf*, the sniper, which meant training tank gunners to able to score long-range kills at up to 2,000 metres. In addition, the crew members were trained to perform each others' jobs so that they could form a cohesive team and, if needed, take each other's place.[375]

The third and most important change was made in the operational principles. The base for evolving a new combat technique for armoured, mechanised and infantry units was to conduct armoured battles as a continuous operation; sustained for up to three days within the "Constant Flow" doctrine. Nevertheless, when standards were set for armoured performance, the question of how long armoured units could move and fight without a break arose. In solving this problem, the Israelis had the benefit of experience with the use of independent brigades in the Sinai Campaign. The principle that was adopted was known as the "Conveyor-belt".[376]

The "Conveyor-belt" placed primary emphasis on the tank forces; they acted like a "mailed fist" whose task was to open a breach in the enemy defences. Mechanised infantry forces were to follow in their wake to widen the breakthrough points by clearing enemy gun lines and trenches and by keeping the breach open for the first-echelon supply columns, whose task would be to extricate and repair fighting vehicles, and for the medical evacuation groups. The infantry on foot, with trucks or civilian buses, made up the third wave. Its task was to continue the mopping-up so that the mechanised infantry would be released to follow the spearhead of tanks, while securing the advance axis for the second-echelon supply columns such as the engineers, artillery, rear headquarters elements and service units.[377]

The operational independence of the armoured spearheads was achieved with formations that were designed to be independent for 72 hours without supplies. Each column was accompanied by mobile maintenance units composed of both recovery and evacuation vehicles that continually pushed fuel, ammunition and other supplies up to the forward lines or back without waiting for requests. However, General Tal's favouring of main battle tanks led to an underestimation of the combined arms principle, according to which the role of support elements – infantry and other support forces like artillery – would become more important as the thrusts went deeper into enemy territory. General Tal believed that heavy armour, with effective air cover, could fight on its own in Israeli conditions. In any case, the aim in this concept was to have mechanised infantry fight on the move. According to Pa'il, originally the

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[375] Katz (1996), p. 66 – 68 and van Creveld (1998), p. 161.

[376] Wallach, J. L: The Israeli Armoured Corps in the Six Day War, Armor May - June/1968, p. 43.

See also Avidor, p. 70.
According to Avidor, one way to pursue flexibility in Israel was to standardise repetitive functions like combat techniques. This would reduce the operational time between the issue of an order and its execution. The "Conveyor-belt" can be seen in this light.

[377] Luttwak & Horowitz, p. 292 and 295 and Dyster, p. 463 – 464.
Support forces, like artillery and road construction units would move along the same axis of the mechanised infantry, sometimes just behind them and sometimes later with the second-echelon supply columns.

mechanised infantry was also to find gaps in enemy lines. In addition, the mechanised forces had the demand of being able to fight dismounted. However, the reality was different. It was seen that the obsolescent half-tracks and the few self-propelled artillery units did not have enough cross-country mobility or protection to follow the armoured spearheads; not to speak of independent missions, which left the mechanised forces mainly with secondary mopping-up missions. This imbalance between arms was not revealed in the Six Day War because of the complete air superiority and the deficiencies of the enemy troops – especially in anti-tank defence – in depth.[378]

The "Conveyor-belt" system had certain similarities to General Fuller's "Plan 1919" concept and to his revised ideas for armoured warfare in the 1930s. It gave primacy to tanks and downgraded infantry and artillery. According to Fuller's concept, the attack would begin with tanks penetrating through the enemy front to destroy the enemy headquarters units some twenty miles in the rear. After this, infantry and artillery would hit the enemy front and when a gap opened up, a pursuing force of tanks accompanied by truck-borne infantry would exploit the opportunity. The "Conveyor-belt" principle also has strict similarities with the German *Blitzkrieg* concept. A chart of Fuller's "Plan 1919" can be seen in Appendix 11, and a picture of the "Conveyor-belt" principle is in Appendix 12.[379]

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[378] Luttwak & Horowitz, p. 175 and 187, Rothenberg, p. 124 – 125 and 463 – 464 and interview of Doctor, Colonel (ret.) Meir Pa'il.

According to the authors, the supply depots of the territorial commands would send forward as many supplies as the divisional logistics units could cope with, while divisional supply units would form smaller convoys to push forward to the brigades. When a fighting unit paused during the advance, it would be reached by a supply convoy ready to replenish it. The only limit in the flow of supplies was seen in the storage and vehicle capacity of the logistics units.

[379] Macksey: Tank Warfare. A History of Tanks in Battle, Rubert Hart-Davis, London 1971, p. 31 – 33, Fuller, J. F. C: Armoured Warfare. An Annotated Edition of Lectures on F. S. R. III (Operations Between Mechanised Forces), Eyre and Spottiswoode, London 1943, p. 9, 18, 25 – 27 and 29 and Fuller, J. F. C: Armoured Warfare. An Annotated Edition of Lectures on F. S. R. III (Operations Between Mechanised Forces), Greenwood Press, Westport Connecticut 1983, p. 124 – 127. This edition is a copy of the original one published in 1932. In the 1943 published edition, Fuller added his notes on WW II.

See also Dyster, p. 128 – 130.

According to Dyster, Fuller downgraded the role of infantry and artillery. The task of infantry was to aid the advance of tanks in certain circumstances; in mountainous and heavily wooded terrain and to protect vital supply and communication services. Fuller did not assign any special value to heavy artillery after the initial assault, because this element was difficult to move, and before WW II he did not place any special value on air power in the operational context. However, Fuller also envisioned lorries full of infantry, towed across rough areas by tanks equipped for the job, as well as artillery towed by tractors to keep up with the pace of the attack already in his "Plan 1919". After WW II, Fuller also put great value on air power operating in co-operation with tanks, which is revealed in his words "we may see tanks and air planes forming one force and infantry a completely separate force."

8.6. Changes in the Air Force and Navy

8.6.1. Preparations for pre-emption

General Ezer Weizman succeeded General Tolkowsky as the Commander-in-Chief of the Air Force. During this time the IAF achieved, according to Bagnall, a high standard of operational capability under an army dominated General Staff. This statement must be understood with the knowledge that the role of the IAF within the General Staff was more independent than that of the other branches. Already in 1962, Weizman outlined the IAF's future doctrine along the lines that Tolkowsky had already preferred before the 1956 War. Now also Weizman's great idea was to destroy the enemy's air power on his airfields, "the proper place to defend Israel is in the skies over Cairo." Once the skies were open, the Israeli Air Force was to devote itself to its second task, supporting the ground forces. According to Cohen, Weizman had originally adopted the concept of hitting an enemy's airfields from a Czech officer in his first Messerschmitt course during the War of Independence. This officer had advised the Israelis to overcome the Egyptian Air Force in this way. At first Weizman, however, more favoured defending Israel's skies over Israeli held territory than over enemy skies, as already discussed.[380]

The missions of the IAF in the early 1960s – and also during the Six Day War – were both defensive and offensive; to shield the mobilisation and interdict the flow of enemy forces on the main axis, and to be a striking force. In the IAF this was interpreted as being implemented primarily with a pre-emptive air strike, a principle already adopted before the Suez Campaign, but not used. The IAF thoroughly analysed its own and its enemy's strengths and weaknesses in their two previous wars. According to this analysis, the IAF's senior officers determined that air superiority and ground support were just the means that the Israelis most needed to achieve victory. This led to the selection of specific aircraft, weapons and tactics.[381]

With fewer tactical aircraft than its enemies had and with certain limits in defence allocations, the emphasis in the development of the IAF was put on the purchase of just one aircraft type; on multipurpose fighter-bombers. According to Dennis Sager, Israel sought a way to paralyse its enemies by exploiting the offensive strengths of air-power: ubiquity, speed, range, potency and flexibility. In the meantime, the Israelis tried to minimise their inherent

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[380] Bagnall, p. 214 – 215, Jones, Ronald D: Israeli Air Superiority in the 1967 Arab-Israeli War: An Analysis of Operational Art, Naval War College, Newport RI June 1996, p. 8, Rothenberg, p. 127 and Cohen, p. 151 and 168 – 169.

The quotation is in Rothenberg's book.

According to Cohen, Weizman pretended that he did not understand why the commanders of the Armoured Corps yearned for more sophisticated tanks if several squadrons could destroy the enemy armoured corps while they were still on their way to the battlefield. This shows that Weizman – despite being a keen fighter pilot – also understood the air force's role in supporting ground forces, though mainly through battlefield interdiction.

[381] Jones, p. 13, Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 12 and Young, p. 45.

Despite the plane sales and the limited amount of joint – mainly technical – research with the French, the development of the IAF was its own business.

offensive weaknesses; the most important of them was their technology. During the early 1960s, the IAF was in a period of transition. Orders had been placed for *Mirage Vs* and *A-4 Skyhawks* with new missile technology, but deliveries did not arrive before the Six Day War. Nevertheless, these deficiencies were not crucial because the IAF favoured acting through a pre-emptive attack in which they could select the priorities, time, place and weaponry to achieve their operational objectives.[382]

The Israeli approach was a weapon optimisation based on the already existing *Mirage III's* and *Super Mystères*, on high quality pilot training and on an effective ground system. Maximum offensive firepower for the destruction of runways and aircraft relied, for its part, on a bomb designed specially for destroying runways at high speed and low altitude, and on 30-mm guns incorporated in existing planes to replace the original rockets.[383]

The pilot training programme put a heavy emphasis on the skills of individual pilots. The new programme – which was in use up until 1990 – was formed during Weizman's tenure, though it was codified after the Six Day War. The basic principles behind the training were combat readiness, realism in training and innovative tactics. These ideas were not far away from the philosophy of the ground forces. Combat readiness meant daily training exercises in operational squadrons, realism meant that exercises were carried out with planes fully loaded as if it was the "real thing" and innovative tactics meant delegating authority to squadrons to make decisions with regard to tactics and training, but also in fitness and combat readiness. Gunnery had top priority. Although fighter pilots were taught missile tactics, their training stressed classic dog-fighting and strafing ground targets at slow speeds and at close range. In addition, the pilots learned to approach their targets slowly and carefully for accurate delivery, paying no attention to fire from the ground. The standard formation was a pair of fighters acting in tandem. This emphasised the innovative tactics that gave the pilots a lot of freedom to take decisions

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[382] Sager, Dennis F: In Search for Leverage: David versus Goliath in 1967, Naval War College, Newport RI June 1997, p. and 7 – 8, Rothenberg, p. 136 and Jones, p. 13.

The *Mirage Vs* never arrived in Israel because of a change of direction in French sales policy.

See also Churchill, Randolph and Winston: The Six Day War, Sunday Telegraph July 9, 1967, p. 7.

Ezer Weizman, who was Chief of Operations during the Six Day War, explained the Israeli air war doctrine before the war as follows: "Bombers are expensive animals and had little application to Israel's defence problems. We need an Air Force capable to destroy any enemy force that might be sent to Israel and which can give support to ground forces." This meant high performance multi-purpose aircraft.

[383] Sager, p. 4 and van Creveld (1998), p. 162.

According to van Creveld, the runway-busting bomb was named *Durendal* after Roland's sword. A parachute slowed it down and a rocket engine drove it deep into the runway.

during combat. The programme of the Flight Course can be seen in Appendix 13.[384]

The importance of the ground crews was not left unnoticed. Effectively arranged, they made it possible to increase the number of sorties in a given time period; a very valuable trait for a country with quite a small number of planes. This fact was already understood in Israel before the 1956 War, but it really became apparent during the Six Day War. During the early 1960s, the IAF put top priority on the maintenance of the maximum number of serviceable operational aircraft at any given time; there was to be a 90 percent rate of combat-ready serviceable aircraft. The ground crew handling of planes was practised and adjusted, time and again. By doing this, the time to refuel, rearm and prepare a plane for take-off between two missions was reduced to 7 – 10 minutes. This all meant that the number of sorties per aircraft was increased in individual cases to even eight per day as compared to a sortie or two per day in the Arab air forces. With only a little bit more than 200 fighter-bombers, the Israelis could expand the practical strength of their air force to be equivalent to a much larger air force.[385]

In the early 1960s, the Operations Branch commander, Rafi Har-Lev, and the top helicopter navigator, Rafi Sivron, began the first discussion at the IAF headquarters of a new and broad plan for the early neutralisation of all Arab air bases. In 1963 the plan was named "Operation *Moked*" and it was connected to systematic air intelligence started in the same year. Since then it has been repeatedly updated as intelligence information has dictated. According to Cohen, "Operation *Moked*" was devised on a model similar to that of the German "Operation *Barbarossa*" in June 1941 when the *Luftwaffe* eradicated much of the Soviet Air Force before it could even take-off. In addition, the IAF headquarters was transferred in 1966 from Ramle to IDF headquarters in Tel Aviv to streamline the command process and enable the centralised use of the air force component. This made the birth of the joint command system a concrete fact.[386]

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[384] Gissin, p. 399 - 400 and 402 – 403, Luttwak & Horowitz, p. 197 and 199 – 200 and Cohen, p. 154 and 156 – 158.

In 1990, the structure of the Flight Course was changed to face the challenges of the twenty-first century.

According to Luttwak & Horowitz, the IAF was unique among modern air forces in not accepting the fashionable missile theory of air combat. This choice was based on the assumption that even supersonic fighters would not engage each other at supersonic speeds. Therefore, most air duels would still have been dog-fights fought at short ranges. This supposition proved to be right during the Six Day War.

See also Rubinstein, Murray – Goldman, Richard: The Israeli Air Force Story, Billing and Sons Limited, London 1979, p. 66 – 67.

The principle of fighting in tandem formation during a war is similar to *Luftwaffe* practice during WW II.

[385] Gissin, p. 396 – 397, Luttwak & Horowitz, p. 228 – 229 and Williams (1989), p. 108.

According to Gissin, the other air forces achieved only a 50 – 60 percent rate of serviceable aircraft.

[386] Cohen, p. 183 and 193 – 195.

See also Nordeen, Lon: Fighters over Israel. The Story of the Israeli Air Force from the War of independence to the Bekaa Valley, Orion Books, New York 1990, p. 71.

General Mordechai Hod brought the plans for "*Moked*" up to date when he succeeded General Weizman in the post of Commander-in-Chief, Air Force. During Hod's tenure the principle of weapon optimisation intensified. Pilot training against simulated airfields in the Negev desert was started to reduce the chance for error and continued until this complex operation became routine. The payload loss due to operational errors was reduced by improving target intelligence; the enemy was kept under continuous surveillance to ensure that the right aircraft would be sent with the right weapon-load over the selected target. Because of the need for maximum bomb loads to be carried by a maximum number of aircraft in every wave, a greater degree of autonomy was given to each air base in controlling the activities of its squadrons.[387]

Pilots also occasionally trained in air combat in their operational missions against Arab planes, mainly in Israel's airspace. However, battle experience was rare, and therefore the Chief of Staff already proposed in 1961 that the Israelis abandon the traditional methods of restraint. Permission to cross borders in pursuit was then given by Prime Minister Levi Eshkol. In addition, pilots were also trained systematically against a captured Syrian *MiG-21* from 1966 onwards. This aircraft was rotated between squadrons to get experience of the character of the plane and train pilots for operations against the plane, which formed the backbone of the interceptors in the airforces of Israel's enemies. In addition, operational deception was started to saturate Arab air-warning systems; routinely every day the Israelis launched large numbers of aircraft in the morning over the Mediterranean, then they disappeared and returned to Israel at low-level below Arab radar.[388]

8.6.2. The birth of the helicopter squadron

The 1956 Sinai Campaign revealed some deficiencies in the IDF's air transport system. Cargo planes could, of course, transfer troops and material according to need but mostly in one direction. In most cases, rescue and evacuation operations far behind enemy lines were not possible with *Dakota* and *Noratlas* transports. This convinced the Israelis of the need for helicopters. However according to Cohen, the role of helicopters in the IDF was not clear at first and different opinions on their use existed. Prime Minister Ben-Gurion had already wanted helicopters to maintain contact with the blockaded Jerusalem before the establishment of the state. Since then Chiefs of Staff had envisioned the

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Nordeen translates "*Moked*" as "*Focus*".

[387] Rothenberg, p. 136, Sager, p. 12 – 13, Cohen, p. 195 and Luttwak & Horowitz, p. 197.
Obviously the simulated air attacks were already started before Hod became C-in-C, IAF. Before this assignment, General Hod was responsible for operations in the IAF.
See also Churchill, Randolph and Winston: The Six Day War, Sunday Telegraph, July 9, 1967, p. 7.
After the Six Day War, Ezer Weizman denied the existence of a detailed plan by saying that "The plans are like bricks. They can be used one by one to build a structure as the situation develops. We don't go in for preconceived and therefore, inflexible master plans." Within the ground forces this was partly true at a tactical level, but not within the IAF. The air operation was based on thorough planning and training.

[388] Cohen, p. 160 and 181 and Jones, p. 11.

use of helicopters according to their own interests; Yigal Yadin planned to use helicopters for rapid deployment of infantry battalions, Moshe Dayan saw them landing commando units deep in enemy territory as an alternative to the airdrop, and Haim Laskov – a tank advocate – felt that they would aid in the destruction of tanks.[389]

After several years of evaluation, the Israelis decided to purchase a force of vertical-lift aircraft. According to this decision, the *Sikorsky S-55*s came into service; in air and sea rescue, coastal patrol and airborne ambulance missions in late 1956. However, Israeli helicopter pilots were more interested in the helicopter's role in fighting missions and requested permission to examine the French helicopter activities against the National Liberation Front in Algeria. After this research, the Israeli Ministry of Defence decided to purchase five *Sikorsky S-58* helicopters, which could carry ten men with their gear. In addition, an inter-branch team was established to develop combat theories.[390]

In the IAF, helicopters were still considered transport aircraft and fighting missions were seen as a fantasy. However, their primary function as pilot rescue craft was a reason to keep them in the IAF, though this did not improve their status. There was also a proposal to take the helicopters from the IAF and place them in the hands of the ground forces. However, realism and several advantages in training and support systems, as well as economy of forces and the principle of simplicity in the command system, were also reasons to keep helicopters in the IAF. With such a small number of helicopters, control on a centralised basis was seen as the best solution. In addition, according to Cohen, Weizman's appreciation of helicopters was limited, although he thought that an airdrop was the quickest and most efficient method for landing an infantry brigade on enemy territory. It is obvious that Weizman thought chiefly of fixed-wing aircraft for airdrop missions.[391]

The helicopter squadron, the Inverted Sword Squadron, was established in January 1958 under the command of Uri Yarom. In the original plan it was to be a wing, but because all the money had been spent on fighter-bombers, the IAF was left with poor helicopters despite great plans for the transport network. The squadron became operational in 1962 when it got an additional 24 *Sikorsky S-58*s from West Germany. Combat missions started soon after this in co-operation with the Intelligence Branch's special troops. Data on these operations is quite sparse, but according to Cohen, the commander of a commando unit, Avraham Arnan, was able to assure both field units and the

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[389] Cohen, p. 163.

[390] Nordeen, Lon: Fighters Over Israel, Orion Books, New York 1990, p. 59 and Cohen, p. 164.

According to Cohen, two *Sikorsky*s had already been purchased before the Sinai Campaign, but without any doctrine they were used as flying taxis.
Eliezer "Cheetah" Cohen himself had trained as a helicopter pilot after the 1956 War and later became commander of an Israeli helicopter squadron, the Inverted Sword Squadron.
Also interview of Doctor, Colonel (ret.) Meir Pa'il.
Pa'il was one of the early supporters behind the idea of using helicopters in combat tasks. In his thinking, helicopters represented the potential to manoeuvre and indirect approach.

[391] Cohen, p. 151, 164 – 165 and 168 – 169 and Marshall, Thomas J: Israeli Helicopter Forces: Organization and Tactics, Military Review, July 1972, p. 95.

Central Command of the utility of helicopters in missions of this type. According to Rubinstein and Goldman, the tactics applied in these anti-guerrilla operations were adopted from the American helicopter tactics in Vietnam.[392]

In 1966 Israel purchased 12 large *Super Frelon* helicopters and formed a new squadron from them. Nine of them entered service by the 1967 War. These helicopters were each able to carry 30 soldiers with their gear. This finally was a turning point in the underestimation of helicopters. Training with paratroopers was started, air-lift exercises were conducted and techniques of evading enemy interceptors were practised.[393] This all meant that with two squadrons of helicopters, constituting about 10 percent of the IAF, the Israelis were – in theory – able to transfer a force equivalent to fighting elements of almost two battalions at a time everywhere within the range of the helicopters. However full of potential this was, the use of the air element in mobile warfare was not understood before the Six Day War. Plans for major airborne operations together with armoured spearheads and Air Force ground support were not produced.

8.6.3. The Navy – unrealised plans

The Navy's role in the early 1960s was modest. However, two different types of threat were foreseen. The first was a sea-embargo, which was not a decisive threat. The General Staff was thinking in terms of a short war, in which the Navy – a small force suitable mainly for coastal operations – would have no influence on the outcome. The other was the threat that the Arab navies could cause to Israeli civilian settlements and to ground operations in wartime. The second threat was a real one, but a response did not materialise in the late 1950s in the form of arms procurement. According to Williams, the Navy came "a low third in the order of procurement priorities."[394]

In the years following the 1956 War, the Arab Navies – first and foremost Egypt – were reorganised and modernised, largely along Soviet lines. The

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[392] Ibid, p. 164 and 166, Rubinstein & Goldman, p. 85 and Nordeen, p. 59.

The commando unit was obviously the anti-guerrilla unit of the General Staff, *Sayeret Mat'kal* or its predecessor.

[393] Cohen, p. 167, Nordeen, p. 59 – 60, Marshall, Thomas J. (1972), p. 94 and 96 – 98 and Rubinstein & Goldman, p. 86.

According to Marshall, the helicopter squadrons also trained with the captured *MiG-21* to get a look at the capabilities of their opponent, and also with their own jets. A formation, which could be expanded to several equivalent groups, consisted of three choppers; leader in the centre. They flew abreast at about 100 m intervals, having in this way enough room to manoeuvre without endangering the formation. When a helicopter was attacked by a fighter, the chopper was to turn toward the attacker and climb. When the range closed, the helicopter was autorotated, manoeuvring from side to side. This kept it under the enemy's line of attack and forced the continual lowering of the attacker's nose giving him only a short time to lock-on.

[394] Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements, p. 12 and Williams (1989), p. 254 – 255.

major changes were an increasing emphasis on submarines and the introduction of missile boats. However according to Dupuy, the Arabs were not ready for immediate action in the wake of the Six Day War, although a number of contingency plans were in existence.[395]

This arms race awaked anxiety in Israel's Navy. Before the 1967 War the Navy was still a small-scale copy of a great power navy; consisting of old destroyers, several submarines and motor torpedo boats. This force was poorly suited for Israeli needs and doctrine because it could provide no significant striking power. Finally late in 1962 with the promise of available funding, this imbalance led to a development program, which according to Luttwak and Horowitz was a "concept for an organic navy, a naval force of missile boats and small submarines that could be integrated in the operations of the rest of the Army."[396]

The background of the development process was similar to that of the Air Force. Louis Williams describes this process in his book *The Israel Defense Forces*. Because of a lack of money for purchasing a large quantity of different types of vessels, the Navy needed multi-purpose boats capable of offensive action, able to defend themselves against a variety of threats and appropriate for patrol duties. This description coincided with the picture of a fast-moving, small-crew platform of different weapons systems. The problem was that this concept did not exist anywhere at the time. Therefore, the Navy wrote up its own specifications; commissioning sophisticated major warships according to its own concepts for the first time instead of acquiring them from other navies. Work on transforming the ideas into reality was started in conjunction with West German shipbuilders. However, because of political pressure from the Arab League, the Israelis had to transfer the programme to a shipyard in Cherbourg, France.[397]

None of the new missile boats had been delivered by May 1967, although the threats had materialised. Therefore, the Israeli Navy had to compensate for its inferiority with changes in its operational plans. The Israeli Navy adopted the principle of operating in two defensive perimeters. Destroyers and submarines were to intercept and defeat hostile forces before they approached Israel's coastal waters, while patrol and motor-torpedo boats were to form an inshore patrol. In addition naval commandos, a unit called *Flotilla 13*, were to

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[395] Dupuy (1992), p. 327.

[396] Luttwak & Horowitz, p. 394 – 395.

See also Lorch, p. 61.
Submarines were not purchased. However, no one doubted that the Navy also needed submarines, but considering the enormous costs of a submarine programme, it was not accorded top priority. Nevertheless, Germany agreed to finance the IDF's submarine programme in the 1990s, which was, according to Lorch, one of the most positive and lasting effects of the Gulf War.

[397] Williams (1989), p. 261 – 262 and Dupuy (1992), p. 327 – 328.

act offensively in forward defence by attacking enemy craft in their home ports.[398]

On the whole, when discussing the development of Israeli doctrine and organisation after the 1956 Sinai Campaign, the Israelis were able to balance the needs of doctrine and the performance of troops in the Armoured Corps and the Air Force. This also shows the main direction of the views behind the operational thinking, although these ideas were not unanimous. Within other branches of the ground forces and in the Navy, the primacy of the tank-air force component resulted in small allocations. This left them without new equipment, and in the case of infantry and artillery in particular, downgraded their status and finally reduced their level of training. However, in the Six Day War and its aftermath these deficiencies were not yet revealed.

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[398] Rothenberg, p. 164, Dupuy (1992), p. 328 and Katz, Samuel M: Flotilla 13: Israel's Naval Commandos. United States Naval Institute Proceedings, March 1993, p. 119.

According to Katz, *Flotilla 13* was known also as *Kommando Yami.* Its model was the Italian Naval Assault Teams of WW II.

9. THE SIX DAY WAR; A LIGHTNING WAR

Handel's statement about the volatility of pre-emptive strategy to trigger unplanned confrontation came true in the Middle East in 1967. In May 1967 the territorial crisis between Israel and her neighbours escalated into a demonstration of force and finally Israel applied her strategy of denial approach and implemented a pre-emptive strike. It can be said that the overall strategy failed because the deterrence power of the IDF was inadequate to prevent the war. Nevertheless, with no room to manoeuvre the Israelis could not afford to let the Arabs get the first blow in.[399]

From the view point of the IDF General Staff, the Six Day War can be divided into four main phases: the fight for aerial supremacy and the wars on the Egyptian, Jordanian and Syrian fronts. Air strikes against enemy air defences were started on 5 June at 7:45 AM. In practise, this phase was already over by the late afternoon of the same day. After getting almost total aerial supremacy, the Israeli Air Force concentrated on ground support. Ground operations on the Egyptian front in the Sinai were launched simultaneously with the first air strikes and continued for four days up to 8 June. This phase ended in the destruction of the Egyptian Army in the Sinai and in the conquest of the Sinai Peninsula. On the Jordanian front in Jerusalem and in the northern West Bank, the battles also burst into flames on 5 June, lasting up to 7 June. During this phase, Israeli troops conquered all of Jerusalem and occupied the West Bank. The final phase consists of the conquest of the Golan Heights on 9 – 10 June. In addition, there were naval engagements both in the Mediterranean Sea and the Red Sea. Naval operations did not play a central role during this war as well. Maps of the major Israeli operations during the Six Day War can be seen in Appendix 14.

Trevor Dupuy states that President Nasser of Egypt found himself drawn into the commitment of major forces against his better judgment. This seems obvious and can be expanded to Israel's other neighbours as well. This all also reflects the lack of Arab war strategy at that time. Military objectives, plans and the readiness of forces were not in balance. This shows that despite the growth of forces and the closing of the Straits of Tiran the Arabs probably had no intentions of launching an imminent attack.[400]

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[399] Handel, p. 538 and Bagnall, p. 198.

See also Tal, p. 27.
According to Tal, the Israelis delivered the first blow because of the circumstances and as a result of a specific plan, not because the theory of the first blow had become axiomatic in the IDF's doctrine.

[400] Dupuy (1992), p. 235.

See also Wallach J. L: The Israeli Armoured Corps in the Six-Day-War – June 1967, LH 2/22, p. 1 and IDF Air Force Intelligence Paper, June 1967, LH 15/5/304, part 3.
According to Wallach, it was obvious that on 26 May 1967 a full state of alert had been declared in Egypt and at least from that particular date a full-scale offensive against Israel was being considered. Wallach based his statement on the captured Egyptian Eastern Air Command's documents in El-Arish. According to this interpretation, the Egyptian intention was to wipe out the Israeli Air Force in the first action and then to cut off Eilat and the southern Negev from the remainder of Israel. The Syrian intention was to launch a two-pronged offensive quite similar to the one in 1948/49, one via Nazareth and the other one

According to Zvi Lanir, the Israeli military also went to war without operative political aims; that is, without strategic war objectives to guide it. However, Dennis Sager states that there was a loose military strategic objective, to reduce the military threat from the neighbouring Arab countries and regain access to the Straits of Tiran for Israeli shipping. This sounds reasonable. At the operational level, the aim of transferring the battle to enemy territory was also already properly adopted. The Operations Branch of the General Staff had prepared two plans for the possible war. The first one, "*Atzmon*", was limited in scope. It entailed the occupation of the Gaza Strip and its southern flank near El-Arish until Egypt agreed to open the Straits of Tiran. The second plan, "*Kardom*", was broader and its objective was to capture the mountain chain in the eastern Sinai up to Jebel Libni. Neither of them was implemented. Moshe Dayan, who succeeded Levi Eshkol as Prime Minister, expanded the area to be captured so that it also included Sharm-el-Sheikh. However according to Dayan, the Suez Canal was not the original objective. Therefore, the operational success determined the extent of Israel's achievements in the end, as Moshe Dayan noted: "The army simply presented me with a *fait accompli.*" After the war, this all still caused continuing political stalemate in the peace process of the Middle East.[401]

At the operational level the Six Day War was, however, a great success for the Israelis. Based on past wars, Israeli leaders believed that if they were able to neutralise the strongest military power in the region – the Egyptian Army – the rest of the Arab alliance would also fall. Therefore according to Chief of Staff Yitzhak Rabin, the Israeli operational idea was as follows:

- First and foremost attain control of the skies by means of a sudden and massive attack to destroy the enemy's air power.
- Transfer the war to the enemy's territory and defeat the enemy's forces as quickly as humanly possible.

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south of the Sea of Galilee, both axes finally aiming to converge on Haifa. The mission of Jordan was obviously to seize the Israeli part of Jerusalem, to split Israel in two between Tulkarm and the Mediterranean Sea and to paralyse Israeli airfields within artillery range. Nothing, however, shows that there was a decision to implement these plans.

[401] Lanir, p. 26 – 28, Sager, p. 6, Wallach, J. L: The Israeli Armoured Corps in the Six-Day-War - June 1967, LH 2/22, p. 5 – 6 and van Creveld (1998), p. 210 – 211.

See also King Hussein: My War with Israel - 2, Sunday Telegraph, September 22, 1968, LH 15/5/315, part 2, p. 7.

Lanir has quoted Dayan's words from Moshe Gilboa's book *Shesh Shanim-Shisha Yamim.*

According to Lanir, the denial strategy connected to the military goal of decisive victory was quite successful; it not only thwarted the enemy's designs, but also paved the shortest road to peace. This did not come true although the Israeli government declared itself willing to withdraw from the occupied territories in return for a peace agreement during the first few months after the war.

According to King Hussein, the Six Day War brought Jordan and Egypt closer. A separate peace agreement with Israel was impossible and the question had to be solved multi-laterally.

- Destroy the Egyptian Army (the main objective) and conquer the Sinai through three axes of advance.[402]

On the other fronts, the strategic objectives of the war were to secure the West Bank and attack and exploit the Golan Heights, though how this was to be done was obviously not precisely planned. With the Jordanians, the Israelis were content to maintain a defensive posture and avoid any provocation that might bring Jordan closer to Egypt, and the Israelis doubted the Syrians would enter the war at all. Therefore, except for the Sinai front, the operational objectives were not planned in detail before the operation, as was also the case with the tactical objectives on all three fronts.[403]

According to Peter Young, the Israeli plans fulfilled the classic concept for a major battle; collision of the advanced troops; struggle to obtain air superiority and exhaustion of the enemy's reserves; a decisive great attack or counter-attack; and finally the exploitation of success once the enemy's lines had broken. The same was true with the air operations in a limited war context. Peter Young divides the air operations into three phases; the destruction of the enemy's air potential – preferably on the ground; interdiction and the destruction of the enemy's power to supply his armies; and offensive air support of the ground forces. At the planning level this can be thought of as having been as Young described. However, in the execution at operational and tactical levels, the aim of favouring unconventional thinking, indirect approach and manoeuvre prevailed. The Israelis were not locked into a particular scheme, with the exception of deception, which turned out as planned when the Israelis tried to give the Egyptians the impression that they were repeating operational plans equivalent to the plans in the 1956 War.[404] Strengths, orders of battle and the losses of the Six Day War can be seen in Appendix 15.

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[402] Rabin, Yitzhak: The Rabin Memoirs, Boston-Toronto, Little, Brown and Company 1979, p. 101 – 102, Sternberg, p. 45 and Sager, p. 6.

See also Lanir, p. 26, Ne'eman, Yuval: This War of Our Resolution and how to Safeguard it's Achievements (1967), p. 7 and a postcard from Yuval Ne'eman to Liddell Hart in the end of 1967 (date missing), LH 2/18.
According to Lanir, Rabin's formulation of the order did not differ from the new formulation made by Dayan. According to Ne'eman, Rabin was the one who made the plan because he was responsible for operating the military machine. However, Dayan, who also played a role in defence and war policy, made the decision to implement the plan.

[403] Sager, p. 6, Smithers, Jimmy D: The Israeli Defense Forces Operational Syncronization during the Six Day War of 1967, Naval War College, Newport RI February 1997, p. 3 and 9, Liddell Hart, B. H: Strategy of a War (1968), p. 19 and van Creveld (1998), p. 182.

[404] Young, p. 85 and 102.

See also Weller Jac: The Breakthrough at Rafa, June 1967, Army Quarterly and Defense Journal, July 1968, p. 176.
Weller states that dummy tanks were used in the southern part of the Sinai to give the illusion of a divisional sized force instead of the brigade that was really there to mislead the Egyptians into supposing that the Israelis were concentrating their troops for an encirclement of Umm Katef - Abu Ageila as had happened in the 1956 War.

9.1. Fight for air superiority

The Israeli pre-emptive strike was a well thought-out plan made by the General Staff, which operated in the Six Day War for the first time as a joint supreme command of the armed forces. Israel had reason to fear a Pearl Harbour-type attack. Her airforce was concentrated on only four main airfields, and had it been destroyed, it would have meant a threat to the whole civilian population. However, it is obvious that the threat of an overall Arab attack was not imminent despite the massive force concentration on Israeli borders.

In the weeks prior to the 5 June, "Plan *Moked*" was updated according to the current intelligence information. The Syrians were expected to react slowly, not until the first wave had been completed and therefore almost the entire IAF was sent to destroy the Egyptian Air Force. Only 12 planes were left to cover inner Israel. Offensive air operations against Jordan and Syria were to be initiated only after these forces attacked Israel. Meanwhile three *Ugdah*s started their movement west along the three central roads of the Sinai.[405]

The attack on the Egyptian Air Force was a classic example of indirect attack on the Arab centre of gravity. Behind this thinking many scholars and researchers tend to see a Clausewitzian influence. True, the Israeli plan had certain similarities to Clausewitz's concepts, which stressed the direct destruction of the enemy's armed forces by attacking its centre of gravity. To avoid a war of attrition and shatter Arab morale, the Israelis attempted to concentrate the maximum amount of airpower very quickly against the enemy's critical vulnerability. By doing that the Israelis were able to gain air superiority and subsequently use air power against enemy armour, artillery, fortifications and troop concentrations. Besides, the surprise and speed made it possible to maintain operational momentum and dictate the tempo of the operation. This gave the Israelis freedom of movement in operational manoeuvre. In order to concentrate against one enemy at a time, it was planned to engage Jordanian, Syrian and Iraqi forces selectively.[406]

General Hod, Commander-in-Chief of the IAF, divided "Operation *Moked*" into three phases: establish air superiority, destroy aircraft and destroy runways. With the help of the Israeli intelligence organisation *A'man*, which specialised in signal intelligence, the IAF knew exactly where every Egyptian combat aircraft was located. In addition, IAF pilots had been continuously provided with updated photos and other information on their assigned targets. Of this thoroughness, General Hod said at a press conference given after the war in Tel Aviv in June 1967: "For 16 years we lived with the plan, we slept with the plan, we ate with the plan. Constantly we perfected it." To implement

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[405] Cohen, p. 196, Tal, p. 27, Ne'eman: This War of Our Resolution, p. 6 and R.A.C. Centre Bulletin No 4, Dec 1968, The Arab/Israeli War compiled by Tactical School, RAC Centre, Digest of RAC Centre Study Day - 29 Feb 68, LH 15/5/315, part 2, p. 17.

[406] Jones, p. 8, Sager, p. 9 – 10, discussions with Doctor, Colonel (ret.) Hanan Shai, Cohen, p. 184 and Howard and Paret, p. 258, 595 – 596, 618 – 619.

According to Cohen, the decision to launch the attack several hours after dawn was made fourteen months before the war when Weizman had stated that the Egyptian Air Force should be destroyed between breakfast and lunch when the peak of morning activities had already decreased.

the plan, each aircraft had a specific mission to destroy a specific target. Runways and aircraft, *MiG-21* fighters and *Tu-16* bombers, had first priority. Air defence radar sites were authorised targets of opportunity. The IAF also first avoided attacking early warning and air defence assets because it allowed them to concentrate their efforts on achieving the main objective of destroying the airstrips and planes. However, prior to and during the attacks, *C-47* transports dispensed chaff along the Israeli/Egyptian frontier, and other electronic countermeasures were also used to disrupt Egyptian radar and radio communications, and also to deny electronic intelligence to the many other forces monitoring the Middle East. Finally, to saturate Egyptian defences, attacks were implemented with almost incessant waves, which continued also throughout the first night supported by illumination by flares.[407]

Egypt was not the only target of the air operations, Syrian, Jordanian and Iraqi airfields were also attacked; the total number being 25 bases. The latter were in retaliation for the bombing of Israeli targets and were commenced later, as planned, after noon. The IAF made almost 500 sorties during the first three hours. The IAF's operational objective, air superiority over the Sinai, was achieved in six hours and by the end of the first day more than one thousand sorties had been made. This created the paralysis that also led to a swift victory on land. By the end of the war, IAF fighter-bombers had, according to Williams, flown 3,280 sorties – close to three per pilot for each day. A total of 450 – 500 Egyptian, Syrian, Jordanian and Iraqi aircraft had been destroyed, a little less than 400 of these in IAF strafing attacks on the ground and 60 in aerial combat. The price to the IAF was 69 aircraft hit, of which 49 were total losses.[408]

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[407] Sager, p. 7 and 11 – 13, Nordeen, p. 68 and 71 and Smithers, p. 7 and 28.

A'man and *Mossad* had infiltrated Egypt's military, political and social establishments. In addition *A'man*'s signal intelligence efforts provided information on the disposition and intentions of Egyptian forces.

Smithers describes the air operation in detail. Phase one consisted of four sequential waves of 40 aircraft, where each wave consisted of ten flights of four aircraft attacking each of the ten airfields for a total of 160 aircraft. Attacks against each target consisted of one bombing run against the runway, and two or three strafing passes against the parked aircraft; all in a very short time – ten minutes. After a ten to twenty minute pause, this sequence was repeated again for phase two targets. According to Sager, 94 percent of the Egyptian aircraft on the airfields were destroyed with 30mm guns. The results were amazing, though interpretations of methods used in this success varies.

See also Dupuy (1992), p. 246 and Churchill, Randolph S. and Winston S: The Six Day War, Heinemann, London 1967, p. 81, Churchill, Randolph S. and Winston S: The Six Day War – 4, Sunday Telegraph July 16, 1967, LH 15/5/315, part 2, p. 7.

According to Dupuy, the Israelis also used guided bombs similar to the American *Bullpup* to destroy the parked aircraft.

According to the Churchills, 23 Egyptian radar stations (16 of them in the Sinai) were put out of action by the IAF, but not until the evening of the 5 June.

The use of electronic countermeasures is also revealed in the newspaper article of the Churchills where the King Hussein of Jordan says that "funny things happened to our radars."

[408] Dupuy (1992), p. 247, Sager, p. 9 and Williams (1989), p. 112 – 113.

See also Cohen, p. 253 and Cordesman & Wagner, p. 18.

According to Cohen, the IAF flew 3,250 sorties during the War. 46 aircraft were lost in attacks on ground targets and only three in aerial combat. Cordesman and Wagner use

The IAF umbrella, i.e. air supremacy, during the war was incontrovertible largely, according to Cohen, due to the flight-control network that had been developed since the 1956 War. This network proved its flexibility and advanced management of the bombing runs of "Operation *Moked*". It also allowed the Israelis to employ the principle of manoeuvre by quickly re-targeting formations from planned targets to new ones of greater importance when required or according to the battlefield damage reports. This all made short turn-around times possible and in practice multiplied the effect of the IAF on its targets.[409]

At the General Staff, the control of air power was centralised. According to Smithers, the IAF headquarters functioned as an operational wartime theatre command, in addition to its peacetime roles, having authority to direct the theatre air power. However, after getting air superiority, control and allocation of all ground support missions were implemented by an air operation office and forward air control units within each command. At wing level, an equivalent emphasis on flexibility, like the ground forces had in their "Optional Control" principles, can also be seen. Raanan Gissin describes this in his dissertation by saying that "the IDF/IAF Command, Control and Communication doctrine (C3) was an "institutionalised form of command bypassing". The principles that were already in use during the Six Day War can be described as follows: On the ground all formations and squadrons were under the direct command of the base or wing commanders, who also participated in tactical and operational planning. Once formations were airborne, they would come under the direct control of the commander of the air force or his designated deputies within the Commands. This principle shortened the chain of command necessary both in air operations and in ground battles. Nevertheless, base or wing commanders also maintained individual decision-making power, especially in aerial battles. Therefore, in many cases they also personally lead their formations in the air both in the Six Day War and in the Yom Kippur War of 1973; often ignoring the prohibition of the General Staff. This, of course, did not change the flexibility in air control, it only personalised the command of the squadrons in the air, though this course of action could have endangered commanders' missions at the base.[410]

Already during the first day of fighting, the IAF achieved the operational objective of air superiority which allowed it to start interdiction and ground

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more generous statistics. The more precise numbers that are shown in this study are included in Cordesman's and Wagner's range.

[409] Cohen, p. 242 and Sager, p. 11.

See also Churchill & Churchill (1967), p. 82, Smithers, p. 17 and Springer, Rita A: Operation Moked and the Principles of War, Naval War College, Newport RI May 1997, p. 6.
Before the war, the IAF had adopted a principle where pilots provided battle damage assessments of their mission during each sortie debriefing. Returning pilots described their maintenance problems to the appropriate experts who were waiting for them after the flights to fix the aircraft with the right tools and parts, including armament. According to Springer, this combat maintenance procedure is also in use today in the United States Air Force.
The Churchills describe the timetable of the IAF flights as follows: on the average 22 minutes flight to the target, 7 min over the target, return to base 20 min, ground turn-around time 7 min and time of flight to a new target.

[410] Smithers, p. 16 – 17, van Creveld (1985), p. 159 and Gissin, p. 384 – 386.

support. Fighter/ground operations were exploited on all three fronts. On the Sinai front, the IAF battered the retreating Egyptian forces, especially in the Mitla Pass area. On the West Bank, the IAF succeeded in blocking many of the narrow roads through the Jordanian hills and was also used in Jerusalem to support the defenders before the arrival of the reinforcements. On the Golan, aerial bombardment was used to soften up the strong Syrian positions on the heights overlooking the Jordan Valley. However, the average daily number of sorties by the IAF dropped from the numbers of the first fighting day to a quarter that number in the following days. According to Cohen, the explanation for this is not due to the losses; rather it was a consequence of the fact that only a few of the ground force's commanders requested the IAF's support. Therefore, the pilots complained that the full air support of the ground forces had not been used until the second day of the war. The ground forces also failed to feed the air force early intelligence information about their next targets, and so, instead of receiving close and organised support, they had received only partial assistance. In addition, Cohen stresses that the ground troops commanders had not had great expectations for the IAF prior to the war. Ground support had been a second priority task. Therefore it had been neither trained for nor was there a solid organisation for co-operation at formation level.[411]

In a way, there were also similar low expectations for the use of helicopters in fighting missions. Therefore, despite the fact that the Israelis had more than three brigades of trained parachute troops and were able to heli-lift a force equivalent to two battalions simultaneously, airborne operations were quite rare. In the Sinai, a heliborne parachute battalion was used in a classic manner to disperse Egyptian efforts and eliminate their artillery in the Abu-Ageila – Umm Katef area. Sharm-el-Sheikh was also captured by heli-lifted paratroopers, though without fighting. On the Golan Heights, heliborne troops were used on a number of occasions in the highland area to seize key terrain ahead of the advance, but in only in small combinations. During the Six Day War it was not unusual to assign choppers to an operation for a period of several days. Nevertheless, the overall command of helicopter units stayed within the Air Force.[412]

9.2. Operations in the Sinai

9.2.1. Egyptian deployments

Egyptian forces in the Sinai totalled about 130,000 men and some 1,000 tanks organised into five infantry (one mechanised and one PLA division in Gaza) and two armoured divisions (one a divisional task force). The initial Egyptian "Plan *Kahir*" was based on mobile defence aimed at luring the Israelis deep into the Sinai and then launching a series of counterattacks. Only screening forces were deployed in the border area. The first defensive line consisted of

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[411] R.A.C. Centre Bulletin No 4, p. 18, Sager, p. 7 and Cohen, p. 238 and 252.

[412] Dupuy (1992), p. 338, R.A.C. Centre Bulletin No 4, p. 27 and Marshall (1972), p. 95.

two infantry divisions in a well-defensible ridge belt 20 – 40 km from the border. This force group was backed by the second defence line some 20 km from the first. The operational reserve, consisting of the armoured divisions, was deployed between and behind these lines.[413]

According to Samuel Katz, the Egyptians had invested a lot of effort in transforming the Northwest of the Sinai into a large, fortified military set-up to protect itself and to serve as a base for an attack on Israel. However, during the demonstration of force in May 1967 the Egyptians made several changes that left little of the original plan intact. The result was that a much larger force of the Egyptian Army than was initially planned was deployed very close to Israeli border. This left the Egyptians vulnerable to Israeli breakthroughs. In addition, most of the planners of *Kahir* had shifted out of the General Staff. Therefore, even the possibility of fixing the plan was out of the question. As a result, the Egyptians moved into the Sinai without having their military objectives and operational idea in balance.[414]

Despite these changes, the Egyptian defensive fortifications were based on the Soviet "Shield and Sword" principle. The defensive "Shield" blocking the major axes of enemy advance consisted of troops in fortified positions of three long channels, one after the other combined together with positions for heavy machine guns, antitank canons, and tanks in well-hidden trenches. In addition, the front entrenchments were protected with minefields. Behind these lines was the "Sword", the armour concentrations. However, although the Egyptians knew where to keep their tanks and how to stage a counter-attack, their reserves were either dug-in or too far away to be committed for a counter-attack at the right time. This gave the Israelis the possibility of penetrating into the Egyptian operational depth. On the whole, this concept was a result of the expectation that defensive lines could no longer be bypassed and major clashes with enemy armour were unavoidable. However, Soviet doctrines were copied without a major attempt to adapt them for the different circumstances of the Sinai. With a limited number of troops in the expanses of the Sinai, the defensive lines were not continuous. Therefore, each "Shield" was stretched out to the point where its flanks were covered by neighbouring forces or by impassable terrain. This gave the enemy the possibility of deciding the battle by concentrating its forces and breaking through the lines. In a flanking attack against a trench, even from the front, there was only a small force facing the attacking power. This was a possibility for the Israelis, who knew the Egyptian deployments quite well. In addition according to Israeli Sinai commanders, the

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[413] Dupuy (1992), p. 240 – 241, Gawrych (1990), p. 77 – 78 and Menzel, Sewall: Zahal Blitzkrieg. The Sinai Campaign of 1967 Exemplified Modern Warfare, Armor 6/1986, p. 27.

[414] Gawrych (1990), p. 77 – 78, Katz (1996), p. 74 and Crow, Scott D: Six Days in 1967...Operational Art in the Sinai, Naval War College, Newport RI February 1996, p. 5.

According to Crow, success in an operation depends on an operational idea that must portray the broad vision of what the operational commander intends to do and how he intends to do it. This did not come true with the Egyptians and can also be interpreted as a sign of their intentions not to launch an imminent attack.

trenches were not constructed very well, obviously because of the changes in "*Kahir*".[415]

However, the most severe restrictions the Egyptians had were in offensive capabilities both at the tactical and the operational levels. According to Leo Heiman, the Egyptians and Syrians also applied the Soviet model in armoured tactics. This meant acting at divisional level, which was dependent on efficient communications and command principles. Lacking these, the Arab divisions moved only in columns, which are usually understood as operational formations advancing along their tactical axis in an organised pattern; capable of battle on the move, but straight ahead and only on a limited scale to their flanks. This made the columns vulnerable to ambushes. These tactics also preferred to deploy for action in a linear formation before meeting the enemy, while only the leading column could engage the enemy in the case of a head-on clash. These patterned and centralised operational principles were inadequate for mobile warfare against the Israelis acting in a 360-degree battle with a decentralised command system. In addition, the Arabs used to dig in tanks which deprived them of their main advantage, mobility. This also coincided with the state of mind of the Egyptian commanders and troops within the fortified positions. The Egyptians only considered the passive element. The Egyptian commanders were statically minded and also lacked the will or capacity to use the considerable armoured resources at their disposal in an offensive manner as was also the case at the lower tactical level. According to Bagnall, the Egyptians had not mastered the art of mobile warfare at any level.[416]

9.2.2. *Ugdah* Tal – a mailed fist

Jimmy Smithers shows the Israeli operational objectives in the Sinai in his study *The Israeli Defense Forces Operational Syncronization during the Six Day War of 1967*. General Yitzhak Rabin, the Israeli Chief of Staff, devised a plan with three phases for the Sinai ground operations. The major objective of phase one was to release the two northern roads into the Sinai by neutralising the Egyptian defences in the Rafah – El-Arish and Umm Katef – Abu Ageila areas. Once this was accomplished, phase two would consist of three divisions enveloping the Egyptian centre of gravity in the central Sinai and blocking the

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[415] Rothenberg, p. 123, Luttwak and Horowitz, p. 234 – 235, Katz (1996), p. 75 and What Happened to the Soviet doctrine?, Jewish Observer and Middle East Review, June 23, 1967, LH 15/5/315, part 2, p. 9.

In the newspaper article, Israeli commanders in Sinai, Gavish, Tal, Sharon and Yoffe, were interviewed.
See also Simpkin, p. 51.
Simpkin calls the "Shield and Sword" the "Hammer and Anvil". The principle is the same; "Anvil" consisting of defensive forces (though in today's terms this force should also be mechanised) and "Hammer", a mobile tank force. According to Simpkin, the "Anvil" can also be an "Anvil of Fire"; an area which is not occupied by forces but is defended with firepower. The Egyptians did not use the "Anvil of Fire".

[416] Heiman (1968), p. 15 – 16, Bagnall, p. 190 and 192 – 193 and R.A.C. Centre Bulletin No 4, p. 18.

Egyptian escape routes in the mountain defiles east of the Suez Canal. The operational COG of the Egyptian ground force consisted of Egypt's "Sword" forces, the 4th and Shazly's Armoured Divisions, and the 3rd Infantry Division, which was in reserve in the Jebel Libni – Bir Hassna region. The final aim was to destroy the trapped Egyptian forces. According to Jac Weller, this plan relied heavily on two principles also taught by Liddell Hart: deep penetration and indirect approach. One can largely agree with this. However, nothing could be accomplished by taking desert territory; the enemy land forces had to be defeated. Therefore, in the Israeli plan, deep penetrations were to disorganise the enemy and make possible the type of fluid warfare that the Israelis were used to applying. In addition, the Southern Command commander Major General Yeshayahu Gavish's solution of pushing fast tank detachments as rapidly as possible in depth to set up road blocks astride the routes leading out of Sinai can be seen as an example of positional dislocation. With this move, the Israelis were able to shift their operational offensive to tactical defence. Besides, this revealed the Israeli aim of taking advantage of Egyptian weaknesses; to force them into movement.[417]

The Israelis committed three *Ugdah*s and two independent brigades in Sinai. This totalled some 70,000 men and 750 tanks, which means that the Israelis were remarkably inferior to the Egyptians in pure numbers and greatly inferior if compared to the classic force ratio of 3:1; thought to be needed in the offence. The Israeli ground offensive begun 15 minutes after the first air attack. According to van Creveld, of the four days that the campaign in the Sinai lasted, only the first, the breakthrough phase, was planned in any detail; the rest was pure improvisation including the role of the Air Force in ground support. Therefore, the overall plan made by General Gavish had a lot of similarities to the Sinai Campaign in 1956. In 1967 the Israelis also had three main axes of movement and two independent brigade sized arrays. In addition, all these formations were made as independent as possible and had their own axes of advance. Combined operations by forces larger than one division were not used, except the commitment of *Ugdah* Yoffe through *Ugdah* Tal. This simplicity proved to be effective again in the always changing situations on the mobile battlefield. Therefore, the task of the Southern Command consisted mainly of assigning axes of advance among its three divisions, laying down boundaries, and allocating air sorties and reserves – which the Southern Command in practice did not have because reserves were internal in *Ugdah*s.

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[417] Long, Charles B: Analysis of the Six Day War, June 1967, ACSC/EDCC, Maxwell Alabama, April 1984, p. 9, Sinai Front. The Six Day War Description of Combats by Commanders, I.D.F. Spokesman's Office, July 1967, description of O.C. Southern Command Brigadier Gavish, p. 2, Luttwak & Horowitz, p. 249 and Weller (1968), p. 176.

See also Smithers, p. 3 and 9.

Smithers speaks of tactical objectives. However, they can be seen as being more operational than tactical; the objectives were directed against the Egyptian defence plan, not so much at winning tactical battles.

However, five brigades of the forces of the *Ugdah*s were ear-marked for later use by the Southern Command.[418]

In the opening phase, the Israelis gave the Egyptians the illusion of having their centre of gravity on the southern part of the front. A brigade with additional dummy tanks served as a feint division ready for an offensive. This gave the Israelis two advantages. First, it made it possible to avoid directly confronting the Egyptian strengths in their dug-in positions. Second, this dislocation enabled the Israelis to concentrate their forces for the initial breakthrough in the central and northern parts of the Sinai, where the road network was a precondition for further operations. Penetration of the Egyptian lines and attack from unexpected directions made the type of manoeuvre that the Israelis excelled at possible. By concentrating their divisions, by manoeuvre and by a skilful selection of objectives the Israeli commanders succeeded in building up a local superiority.[419]

The operations of the *Ugdah*s were very dissimilar. They fought in different conditions and were therefore organised according to the mission. Despite these preconditions, all the operations were implemented in the spirit of mobility. Brigadier Israel Tal's *Ugdah* best represented the Israeli armoured warfare developed in the years before the war. Tal massed his forces against the Egyptian defences. Although it was a frontal attack, Tal had very little choice because an almost continuous belt of fortifications faced his forces. According to Rothenberg, Tal, who had received instructions from Chief of Staff Rabin to achieve a decision at the earliest possible moment, was also aware that much depended on the initial victory, which would establish the psychological and moral climate. According to this concept, the timing of the ground offensive was changed as late as the last night before the beginning of the operation. Pa'il states that initially the Israelis had planned two aerial blows before the start of the ground offensive. On the last night, he suggested to Rabin that the ground offensive should be synchronised with the aerial offensive to take advantage of the morale blow. This change was made, Tal's offensive was moved five to six hours earlier. This deviation from the original plan gave the Israelis the possibility of freeing the paratroop brigade that was attached to Tal's *Ugdah* for use by the Central Command in the Jerusalem area already during the first day of fighting. This later freed another paratroop brigade for use in the Central Sinai in Brigadier Sharon's *Ugdah.* Nevertheless, it may be argued, as Rothenberg notes, that Tal's decision to attack at a strong point in itself constituted an element of surprise as well.[420]

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[418] van Creveld (1985), p. 200 – 201, Dupuy (1992), p. 338, Nordeen, p. 83 – 84, Weller (1968), p. 175 and Smithers, p. 14.

Smithers also mentions that the Sinai ground operation was improvised from phase two, although the results indicate that this was not a severe restriction because the plan was simple and the wartime command and control system worked well.

[419] Weller (1968), p. 176 and Young, p. 109 – 110.

[420] Rothenberg, p. 141, Wallach: The Israeli Armoured Corps in the Six-Day-War, p. 3, Katz (1996), p. 79 and 81 and interview of Doctor, Colonel (ret.) Meir Pa'il.

Colonel Pa'il was Tal's deputy in the Six Day War.

However in General Tal's concept, for armour to penetrate deeply, it had first to penetrate. In Tal's division, the tank battalions acted as a "mailed fist", whose task was to open a breach in the enemy defences; mechanised infantry forces followed in their wake to widen the breakthrough points by clearing enemy gun lines and trenches. Therefore van Creveld's or Major General Adan's opinion that there was nothing particularly indirect in Tal's thrust into the northern Sinai is justified. However, according to Weller, Tal and his superiors pondered the problem of how best to take Rafah without assaulting it directly. The solution was to attack Rafah by way of the Palestine troops in Khan Yunis. These troops were seen as being weaker than the Egyptians in morale, guns and fortifications and were in addition almost out of artillery support. Therefore, General Tal massed his tank brigades for an all-tank breakthrough on the thin border defences manned by the Palestinian Division, outfought an Egyptian tank battalion at Khan Yunis and moved south to the Rafah junction without pausing to regroup. Mechanised infantry was left behind in reserve. In the meantime, the parachute brigade attached to Tal's *Ugdah* made a wide sweep to the south, then attacked northwards over supposedly impassable sand dunes, again achieving tactical surprise. In this light, the initial phase of Tal's division can be seen as having been indirect – as Jac Weller notes in his article *The Breakthrough at Rafah*.[421]

However after the initial battle, the Egyptians were able to put up stiff resistance between Rafah and El-Arish. Therefore the Israelis, acting according to their "Conveyor-belt" principle, reacted to the difficulties. According to Paul Dyster, Tal's *Ugdah* provides the best example of the "Conveyor-belt" system being put into practice. However, Dyster doesn't criticise its weaknesses like Samuel Katz, who says that after the initial breakthrough Tal's armoured brigades almost lost their momentum because the forces committed to the breakthrough could not be relieved for the pursuit. The belt did not stretch far enough and plenty of mistakes were made, especially in combined arms principles when forces got lost or stuck in the sand. In addition, the artillery was only adequate in the initial phase of the battles, and it usually was unable to follow the armoured spearheads. Nevertheless, as an example of a determined pursuit of aim with acceptable casualties, the Israelis were able to force open the critical Jiradi defile, which was a prerequisite for further operations. As a matter of fact, this was a critical sector in the whole enemy defence plan; the breakthrough at Jiradi caused the collapse of the Egyptian planned defence.[422]

On the second morning (6 June), Tal's *Ugdah* was divided in two to pursue the retreating Egyptians along the coastal road to the Suez Canal and to link up with Brigadier Yoffe's forces, thus building a pocket and trapping almost all the Egyptian forces defending the northeastern Sinai. According to Brigadier Tal, this manoeuvre was carried out according to the principles of the best classical tank warfare tradition – German ones, one might say. Tank

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[421] Luttwak & Horowitz, p. 239, 292 and 295, Weller (1968), p. 177 – 179 and 183, Williams (1989), p. 189 – 190, van Creveld (1998), p. 196 and interview of Major General Avraham Adan.

[422] Dyster, p. 463 – 464, Katz (1996), p. 99 and 104 and Rothenberg, p. 141.

formations drove deep into enemy lines without paying attention to their unprotected flanks to upset the enemy's equilibrium and attack him from behind and inside. This movement gave the Israelis a tactical advantage of countering the moving Egyptians with sniping methods by tanks at ranges up to 3,000 metres; principles that proved, according to Katz, to be a lifesaver.[423]

Only the pursuit phase aimed at blocking the withdrawal of Egyptian forces in the Sinai defiles was not a complete success. Although small Israeli units were able to drive straight through the retreating Egyptians to reach the passes ahead of them, they were not powerful enough to stop all Egyptian forces. The encirclement by the main Israeli forces from the south also came about too late. The pincer was delayed and at least part of the Egyptian 4th Armoured Division succeeded in escaping despite the pressure of the Israeli Air Force.[424]

9.2.3. *Ugdah* Sharon – a combined arms offensive

The attack of Brigadier Ariel Sharon's *Ugdah* was quite unconventional in the Israeli armoured warfare context of the 1960s. Sharon's *Ugdah* was an all-arms one; it consisted of a tank brigade, an infantry brigade, a heliborne paratroop brigade and, for the Israelis, a large concentration of artillery. According to Pa'il, Sharon's operation was already planned in the General Staff before the war and was based on experiences and study of the 1956 War in the same area. Already after the 1956 War, the paratroopers had done a survey and found that tracked movement was also possible in certain areas in Abu Ageila. From then through the 1960s, the battle of Abu Ageila was included in the curricula of officer courses, although obviously not as a systematic historical case study – as Gawrych notes – but as a contemporary tactical exercise. This confirms the non-stereotyped manner of thinking of the Israeli commanders.[425]

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[423] Van Creveld (1998), p. 187 – 188, Katz (1996), p. 89, Young, p. 111 and Sinai Front. The Six Day War Description of Combats by Commanders, p. 6.

[424] Van Creveld (1998), p. 195, Katz (1996), p. 79 and 81 – 82 and Smithers, Jimmy D: The Israeli Defense Forces Operational Syncronization, Naval War College, Newport RI February 1997, p. 14.

The Israelis operated with complete air supremacy. Therefore according to Katz, armed trainers, *Fouga Magisters*, were especially used in close air support in many cases. The IAF was also used for counterartillery bombardments.

According to van Creveld, the IAF was responsible for destroying most of the retreating Egyptians at the Mitla Pass.

[425] Gawrych (1990), p. 72 – 74 and interview of Doctor, Colonel (ret.) Meir Pa'il.

Although the plan was drawn up in the General Staff, this does not exclude Sharon's share in its implementation.

See also Dayan, Yael (1967), p. 53.

According to Yael Dayan, Sharon's operational plan represented the whole IDF on a miniature scale. One can not agree with this statement. Sharon's tactics were more of an exception – excluding the tendency towards continuity – to the "Constant Flow" doctrine.

The breakthrough phase was started on the first night without air support, which was not available, but with artillery support. The initial operation can be divided into six phases as follows:

- Phase One: Concentrated artillery bombardment of Egyptian defensive positions.
- Phase Two: Penetration of reconnaissance groups to cut off Egyptian positions from the rear to prevent reinforcement.
- Phase Three: Tank attack on the rear of the enemy position.
- Phase Four: Destruction of Egyptian artillery in Abu Ageila from the north by paratroopers landed behind the enemy lines by helicopter.
- Phase Five: Infantry assault on the northern Egyptian flank to clear the front line trenches and permit engineers to make lanes through the minefields
- Phase Six: Breakthrough of tanks into the main fortified position.

In addition, a reduced infantry brigade was used to deceive the Egyptians in the south. This breakthrough phase was carried out almost as planned and represents both a dislocation of enemy forces and a concentration of forces from a temporal point of view. The attack was an operation of several seemingly rather separate thrusts where the concentration was reached with simultaneous effect on the enemy.[426] One illustration of Sharon's operation can be seen in Appendix 16.

The planning of the operation was very detailed and all the commanders were included in this process as Sharon had done in the operations of his paratroopers against Palestinian guerrillas during the 1950s. According to Sharon, the plan was a combination of close combat, night-fighting, surprise, attack from the rear, attack on a narrow front, meticulous planning and the concept of the "*tahboulah*", the relationship between headquarters and field command. In addition, a two-week training period where operational aspects were perfected with a sand table and battle techniques to overcome the Egyptian trench system were practised before the operation. All this aimed at using their own strengths of mobility and an ability to fight at night, and at taking advantage of enemy weaknesses; most of all their exposed defensive lines and their inability to conduct mobile warfare. In this planning process, preparations and unconventional thinking, Bagnall tends to see traits of Wingate's teaching and PALMACH applications. In addition, Adan tends to see the indirect approach behind the operation. One can agree with both statements, if it is remembered that indirect approach for the Israelis was

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[426] Young, p. 107 and R.A.C. Centre Bulletin No 4, p. 19.

See also Sinai Front. The Six Day War Description of Combats by Commanders, description of Brigadier Sharon, p. 8, Bond, p. 264.

According to Brigadier Sharon, the Israelis did not attack according to a book; the operation was neither a typical armoured offensive and nor was it therefore also expected by the Egyptians. Speed, momentum and the example of the officers were the most important factors in this success.

Brian Bond confirms this. According to him, Sharon drew lessons from his own experience. Every staff officer had to be committed to the success of the plan, and in the battle stay forward to be able to intervene in the battle if needed. This overall principle is very similar to the German *Auftragstaktik*, which as already discussed might well have been a principle adopted from the British and applied by Sharon.

above all a way of achieving surprise by unconventional thinking. However in terms of operational thinking, Sharon's battle rather resembled modern joint operations in a deep battle area. Nevertheless, this can also be linked to the indirect approach because the aim of deep battle was and is to cause not only physical, but also a mental blow to the enemy which later was expected to shorten the battle and finally the war as well.[427]

Although inferior in manpower, the Israelis were able to get local superiority by manoeuvre. After the infantry flanking operation into the Egyptian trenches in Abu Ageila, Sharon's armoured units exploited the success and rushed forward to encounter the enemy tanks and to play havoc in the enemy rear. The main aim was to push the retreating Egyptians into the roadblocks in the Sinai defiles. However according to van Creveld, inactivity overtook Sharon's forces, either because of exhaustion or because they received no orders from headquarters. The task of Sharon's *Ugdah*, a wide sweep from the south to the Mitla Pass, as well as the commitment of Brigadier Yoffe's *Ugdah* through Sharon's forces could also have been an explanation for the momentary lost of momentum. Whatever the reason for the delays, the result was that the southern Egyptian armoured task force, Force Shazly, was able to slip away before the Israeli pincers shut in the Mitla area.[428]

The use of heliborne paratroopers in Sharon's plan also represented the tendency to surprise the enemy with mobility and render his critical strength irrelevant. In the Sinai, the Israelis carried out two landing operations; a heli-lift of a paratroop brigade to destroy the Egyptian artillery in Abu Ageila and the conquest of Sharm-el-Sheikh. Only the former can be seen as having been a real combat task. Egyptian artillery played a critical role in Abu Ageila; it was the skeleton of the Egyptian defence and a threat to Israeli movement. If the artillery was destroyed, it would become the weak point of the Egyptian defence. The Israelis decided to destroy this concentration with a swift manoeuvre, a penetration of mobile forces into the Egyptian tactical depth, – not with their artillery, which might have not only been a waste of effort because of a lack of results, but also time consuming and therefore out of question. Therefore, a helicopter squadron was attached to Sharon's *Ugdah* and the pilots were connected to the planning process. According to Eliezer Cohen – who at the time was the commander of the squadron that took part in

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[427] Sharon, p. 181, 187 – 191, Gawrych (1990), p. 91, Dayan, Yael (1967), p. 14 – 15, Long, p. 42, van Creveld (1998), p. 197, Bagnall, p. 200 and interview of Major General Avraham Adan.

[428] Wallach: The Israeli Armoured Corps in the Six-Day-War, p. 3, Smithers, p. 14 and van Creveld (1998), p. 187.

See also Dayan, Yael (1967), p. 70, 78 and 80 and Sharon, p. 184 – 187.
According to Yael Dayan, Sharon pressured his superiors to continue the pursuit of the Egyptians immediately after the breakthrough in Abu Ageila. This concept of not giving the initiative to the Egyptians or of giving them time to recover can also be seen in Sharon's text. However, Yael Dayan mentions that after 60 hour of battles (2 days) the Israelis stopped to rest on the evening of 7 June and during the next night the enemy was able to withdraw without major battles.

the battles in Abu Ageila – this operation was the foundation of joint airborne operations.[429]

9.2.4. *Ugdah* Yoffe – an example of the indirect approach

The third Israeli main thrust in the Sinai was the most exceptional in terms of conventional warfare, although not phenomenal in the Israeli context. Between General Tal's and General Sharon's forces, the Israelis committed their third force, General Avraham Yoffe's *Ugdah,* to battles through terrain that the Egyptians had regarded as impassable. The Egyptians had therefore left this area without fortifications and troops. In addition, Yoffe's troops were committed through the forces of both Tal's and Sharon's *Ugdah*s, which can be seen as a risky operation because of a fear of total confusion. General Yoffe's *Ugdah* was, as was General Tal's, an armoured task force and applied the "Conveyor-belt" principles though in a different, more indirect way than General Tal. On the whole, Yoffe's operations can be seen as a continuation of his 1956 actions through the pathless Sinai to Sharm-el-Sheikh.

General Yoffe's operation is a good example of the use of the "expanding torrent" principle. Liddell Hart also mentioned this in his article for *Encounter* in 1968. He said that the Israeli plan and operations combined the strategic offensive with the tactical defensive, which meant getting around the back of the Egyptians in the Sinai after the opening penetrations, blocking their lines of retreat and forcing them to attack when trying to escape. General Adan also sees traits of the indirect approach behind this operation. On the other hand, Peter Young compares Yoffe's breakthrough to the British offensive against the Italians in North Africa in 1940 where two British divisions were able to take five Italian divisions from the rear and cut their lines of communication. This statement seems to have a foundation as well. According to Brian Bond, General Yoffe had told him that the most important influence on his (Yoffe's) decision was his experience of similar treks with the British 8th Army in WW II in North Africa. In the Six Day War, Yoffe's operation was also based on good intelligence information and had similarities to Yigal Yadin's operations on the same front during the War of Independence. When Yoffe's armour outflanked the Egyptians in the El-Arish – Khan Yunis area, his tanks took a route that had been reconnoitered by the Israelis ten years earlier. The objective was to penetrate the enemy's vulnerabilities; to interpose themselves between the two main Egyptian fortified areas to the north and south. In his battle description, Yoffe says that the purpose of his operation was to arrive at the rear of the enemy defensive positions and to try to do two things there; stop reinforcements from getting to the main defence and try to catch anybody who was trying to run away.[430]

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[429] Sharon, p. 189 – 190, Leonhard, 173 and Cohen, p. 230 and 244.

[430] Sinai Front. The Six Day War Description of Combats by Commanders, description of Brigadier Yoffe, p. 1, Wallach: The Israeli Armoured Corps in the Six-Day-War, p. 4, R.A.C. Centre Bulletin No 4, p. 18, van Creveld (1998), p. 185, interview of Major General Avraham Adan and Young, p. 65 – 66 and 69.

Adan was Yoffe's deputy during the Six Day War.

After the penetration, Yoffe's *Ugdah* raced towards the Suez Canal to block the enemy escape routes; paying no heed either to logistic considerations or to the fact that this relatively small force was crossing an area still actually controlled by large enemy forces. This manner of fighting also caused logistical problems. Because no routes were in Yoffe's sector, it had been left without any artillery and the second echelon supply also encountered difficulties. Therefore, some units had to fight continuously up to the end of the operation and were saved from being totally out of supply because of the passivity of the Egyptians, by last time reinforcements and by the air-drop of supplies.[431]

9.3. Operations in the West Bank

On the central battlefront, the Israelis were not prepared for offensive operations because Jordan was not expected to be a primary threat. Therefore, no divisional task forces were mobilised on this front. When the hostilities began, the Israelis had to improvise an *ad hoc* strategy at the moment Jordan joined the United Arab Republic-led military alliance and attacked Jerusalem and the Tel Aviv coastal strip. Originally three infantry brigades, one permanently stationed in Jerusalem, one mechanised brigade and one paratroop brigade transferred from the Northern Command as soon as the situation in the Sinai was clear were put under the command of OC Central Command Brigadier Uzi Narkiss. He faced nine Jordanian brigades with some 55,000 men.[432]

See also Liddell Hart, B. H: Strategy of a War, Encounter, February 1968, LH 15/5/304, part 2, p. 17 – 19 and Bond, p. 262 – 264 and a letter from Adrian Wilson to Liddell Hart July 6th, 1967, LH 15/5/304, part 2.
Young tends to see more German influence; descending from Frederick the Great via Scharnhorst, Gneisenau and Clausewitz to Manstein, Rommel and Guderian, behind the military thinking of educated Israeli soldiers than Liddell Hart. Obviously the influence came from both directions, as already discussed.
Liddell Hart saw his theories coming true in General Yoffe's operation. This can be seen in the following Liddell Hart: "It fulfilled an axiom I had deduced in my earliest book on the history of strategy, and often made since, that: "Natural hazards, however formidable, are inherently less dangerous and less uncertain than fighting hazards. All conditions are more calculable, all obstacles more surmountable, than those of human resistance. IN SUM, THE PLAN was a superb application of the Strategy of Indirect Approach, and its corollary of choosing 'the line of least expectation', to throw the opponent of balance."
General, Sir Richard O'Connor was in charge of a British division in Africa in 1940. His connection to Liddell Hart remains unknown. However, as was already discussed, the later supreme commander of British forces against the Germans in the Western Desert was General Montgomery. He was known to have thoughts that paralleled Liddell Hart's in many cases.

[431] Wallach: The Israeli Armoured Corps in the Six-Day-War, p. 4, Sinai Front. The Six Day War Description of Combats by Commanders, description of Brigadier Yoffe, p. 2 and Rothenberg, p. 138.

[432] Heiman (1967), p. 63, Dupuy (1992), p. 284 and 338 and Nordeen, p. 75 – 76.
General Narkiss, who already during the War of Independence had fought in Jerusalem, knew the operational area and the Jordanian defence system very well.
See also Wallach: The Israeli Armoured Corps in the Six-Day-War, p. 1.

When the Jordanians opened hostilities, the Israelis quickly reallocated Brigadier Elad Peled's armoured *Ugdah,* originally ear-marked for other tasks in the Northern Command. This balanced the force ratio at approximately 1:1. However, within only a matter of hours the Israelis were able to conduct a series of operations which ultimately achieved objectives previously considered to be impossibly ambitious, especially the regaining of the possession of Jerusalem. Operationally the battles in the West Bank can be divided into three: the capture of Jerusalem, operations in the northern West Bank and the conquest of the southern West Bank.[433]

Some scholars familiar with the subject tend to also see traits of indirect approach in the Israeli West Bank operations. At the strategic level, the Israeli *ad hoc* plan was based on the expectation that Jerusalem and the West Bank would be thoroughly defended by the Arab Legion. That turned out to be correct. However, the Jordanians suffered from some severe weaknesses, which the Israelis were able to use to their advantage. The Jordanians, although they were in well dug-in fortifications, didn't have a second line at all. In addition, operational reserves were far away from the front. Because the Israelis had complete air superiority from the 5 June, the commitment of the Jordanian operational reserves became impossible when the IAF was used in interdiction missions to disrupt the opponent's efforts to regroup his forces. The IAF was also used in the Jerusalem area for close air support before the arrival of reserves. This gave the Israelis the possibility of concentrating their forces on one threat at the time; first on the northern West Bank and the Jerusalem area and then on the southern part of the West Bank. In accordance with this the Israelis first concentrated three brigades – an armoured brigade, a dismounted paratroop brigade, and an infantry brigade – on a series of local flanking moves in the Jerusalem sector. In the meantime they also launched an *Ugdah* pincer offensive against Jenin and Nablus in the northern West Bank culminating in an attack on the rear. This is why Yigal Yadin considers the whole campaign to be a brilliant chain of tactical improvisations – all based on the main doctrine of the indirect approach.[434]

After a totally unexpected attack east of Jenin and the seizure of the Ramallah ridge, the Israelis dominated Jerusalem to the south, and outflanked all the Jordanian positions to the west and north. According to the OC Northern Command Brigadier David Elazar, the Jordanians also failed to recognise the main Israeli effort. The Jordanians presumably hoped to defend every single

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Wallach sees the possibility that the mission of the Arab Legion was to encircle the Israeli part of Jerusalem, to seal it up and seize it. Secondly, Wallach also envisioned that the Jordanians would try to split Israel in two at the narrow waist between Tulkarm and the sea. The former threat materialised, although the objective was not achieved. The Jordanians never even got a chance at the latter action.

[433] Bagnall, p. 203 and Liddell Hart: Strategy of a War, Encounter (1968), p. 19.

[434] Central Front. The Six Day War Description of Combats by Commanders, description of Brigadier Narkiss, I.D.F. Spokesman's Office, July 1967, p. 1, a letter from Yigal Yadin to Liddell Hart 29th August 1967, LH 2/23, van Creveld (1998), p. 191, Cohen, p. 240 and Liddell Hart: Strategy of a War, Encounter (1968), p. 19.

According to Cohen, *Fouga Magister* training aircraft saved Jerusalem before the arrival of reinforcements and before its defenders even knew the size of the threat arrayed against them.

frontier and by doing so prevent any serious penetration of their territory. This did not happen. The Israelis used a number of axes in establishing themselves upon the Ramallah ridge and cut Jordanian lines of communications so that their real objective remained unclear to the Arabs until their own lines had been secured and forces had been concentrated for the next move. Therefore, already drawn into the battles around Jerusalem and elsewhere along the frontier, the Jordanians were unable to react effectively against the new threat deep in their rear.[435]

Tactically, although the Israelis also applied their "Conveyor-belt" principles on this front, they fought in more balanced combinations of troops than in the Sinai in general. Basically this was obviously a consequence of difficult terrain that necessitated the use of different types of units in co-operation with each other. The second reason might have been that the Israeli commanders on the West Bank were mostly not tank officers and were therefore more used to co-operating with other branches. However, the Israelis drove their tanks through the streets of several villages, with the force shooting on all sides like the jeep-borne commandos during the War of Independence. This physical shock was quite successful everywhere it was used, although mainly because of the opponent's lack of anti-tank weapons.[436]

The capture of Jerusalem was the most difficult part of the West Bank operation. The Jordanians were ready to fight to the bitter end, as were the Israelis, to unite the ancient Jewish town. In addition, the large scale use of firepower and tanks was out of the question. Therefore, tactically the conquest of Jerusalem was a rather typical battle in a defended populated area. Nevertheless, the unification of Jerusalem can be seen as resulting in acceptable casualties. It was a battle of two wills, and the Israelis were prepared to pay more, though since they had complete air supremacy they also had the possibility of concentrating their effort. The Israelis also tried to use the co-operation of different types of troops in Jerusalem. In addition, the use of the dark still dominated, as was also the case on the other fronts.[437]

9.4. Operations on the Syrian front

The Syrians were not very active during the first days of the Six Day War, nor were the Israelis, despite several plans to launch an offensive earlier than it was made in reality. Obviously this was a result of the calculation of force ratios. Although the Israelis needed to find a solution to the hostile situation that had prevailed in the northern Jordan Valley during the entire early 1960s and time for the operation was going down the drain, the Israelis probably did not have enough forces for simultaneous offensives both in the West Bank and on the Golan Heights. The Syrians had deployed eight brigades organised in

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[435] Northern Front. The Six Day War Description of Combats by Commanders, description of Brigadier Elazar, I.D.F. Spokesman's Office, July 1967, p. 1, Young, p. 136 and 140 and Bagnall, p. 199 – 200.

[436] Williams (1989), p. 192 and Young, p. 136.

[437] Luttwak & Horowitz, p. 268 and Bagnall, p. 200.

three divisions on the Golan, totalling over 30,000 men supported by several hundred tanks and artillery pieces. The Israelis originally had only three brigades in northern Galilee, but after reinforcements the force ratio balanced. There were eight Israeli brigades, three of them armoured including Brigadier Peled's *Ugdah* which had already fought in the West Bank; in total some 20,000 men and 250 tanks.[438]

The Syrians had thoroughly fortified the Golan Heights, which was composed of a continuous zone of mutually supporting bunkers, ten miles in depth. According to Samuel Katz, the strongholds were typically surrounded by an all-encompassing circular battery of guns and firing pits with infantry forces positioning themselves in the inner area of the fortifications, and the supporting tanks positioned on both sides of the stronghold. It was a formidable fortification, though its importance in the Syrian defence in 1967 has been exaggerated. It also contained several weaknesses that the Israelis were able to use because of the intelligence information provided by the Israeli spy Eli Cohen before the war. Both van Creveld and Young, who visited the area after the war point out this fact in their books. According to Young, the boulder strewn slopes leading up to the Syrian position were in fact "tankable" and secondly the Syrian positions, although doubtless well covered by concrete and wired, were often clearly visible to the naked eye and therefore also vulnerable to the *Centurions*' 105 mm guns. According to van Creveld, the topography made lateral movement along the slopes impossible, which meant that swift moves of reserves were also impossible. In addition, the Syrian lines had been built to overlook each other, each successive line supported by the line behind. This made it impossible to redirect the guns, and the farther up the slopes the Israeli units climbed, the less artillery support the individual bunkers received.[439]

In peacetime, IDF Northern Command had made several plans for different scenarios, two of them offensive in character. "*Makevet* (Sledgehammer) North" was an offence against the northern part of the heights and "*Makevet* South" an attack on the centre. According to these plans, the sledgehammers would drive a few thin wedges in, which would be expanded outwards the further the penetration went into enemy territory until the pincers could close in flat terrain suitable for armoured operations. The defensive "*Makevet* Center" was a plan for a holding operation. After the out break of hostilities on 5 June, the Israeli plan was modified, according to van Creveld, to take the Golan Heights from each end.[440]

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[438] Dupuy (1992), p. 318 – 319, Nordeen, p. 83 – 84 and van Creveld (1998), p. 191 – 192.

[439] Katz (1996), p. 249, Young, p. 154 – 156 and 163 and Creveld (1998), p. 191 – 193.
See also Howard & Hunter (1967), p. 38 – 39.
The myth of the imperviousness of the Syrian defensive lines has persisted up to this day. Michael Howard and Robert Hunter describe the defensive line as a masterpiece of defensive fortification constructed under Russian direction. Howard and Hunter estimated that no army in the world would be able to break it after several weeks of wearing-out battles.

[440] van Creveld (1998), p. 191 – 192.

According to Leo Heiman, the Israeli plan that was carried out on the Golan Heights was based on two factors: the attrition caused by the planned 100 hours of incessant aerial and artillery bombardment and on surprise, which meant tactical moves and operational ruses to disguise the main thrusts and prevent a concentration of enemy forces against them, in other words dislocation of the enemy strength. In this context, Brigadier Elazar preferred to open as many breaches in the Syrian line as possible. Finally, however, the "friction of war" prevented the planned moves of ground forces. According to van Creveld, the Israeli lack of traffic discipline created a jam that delayed the effort an entire day and with these limits the Israeli main effort was then started with the two brigades deployed already on the northern, steepest and most difficult end of the Golan. Nevertheless, this area was also the least expected target and the defence consisted mainly of static positions on the obvious approaches.[441]

Van Creveld writes that the Israeli operation on the Golan was not a combined arms one. One can mainly agree with this. From the beginning the teams of tanks preceded by bulldozers that opened passages and the infantry mostly advanced separately. The heavy artillery and air bombardment that had already continued for some 100 hours greatly helped the movement. Although it could not totally destroy the Syrian fortifications, it at least interdicted daylight troop movements. Several hours after the start at 11.30 hours on 9 June, the Israelis were able to reach the edge of the plateau. As a result of this success, the Syrian front began to collapse. The southern Golan fell without fighting, and the Syrians escaped. In the central sector during the coming night the Israelis were still able to continue their manoeuvre with armoured thrusts that ended the next day in the encirclement of the remaining Syrian armoured division.[442]

Despite the low degree of co-operation between different branches, the IDF Golan operation can be seen as a joint operation of ground forces and air force elements. In addition to aerial bombardment and interdiction, in the operation aimed at cutting the Syrian lines of communication in the central Golan the Israelis also used heliborne combat transport to complete the encirclement and seize important terrain ahead of the advance. While this co-operation was quite successful, this action also revealed the IDF's small heli-lift capacity. Although the Israelis were already aware at the time of the American experiences in Vietnam, which showed that such a landing demanded a force of helicopters several times greater than Israel had, they had not developed their helicopter units, mainly for economic reasons and partly also because of a lack of trust in this kind of action. Therefore, despite the fact that a conceptual idea of airborne operations had already been adopted, the helicopter squadron that was used on the Golan was too small to transport even a battalion of combat troops at one go. The result was that the airborne

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[441] Ibid. and Northern Front. The Six Day War Description of Combats by Commanders, description of Brigadier Elazar, p. 5, Heiman (1967), p. 64 and Bagnall 191 and 203.

[442] van Creveld (1998), p. 193, Luttwak & Horowitz, p. 274, Asher & Hammel, p. 248 and Young, p. 161 – 163.

troops were transferred to the heights in a continuous train of small groups, which increased risks and complicated logistical support.[443]

On the Golan Heights, the Israelis were not able to destroy the Syrian army. The encirclement was also not totally successful here. The manpower mainly succeeded in escaping, although a large quantity of equipment was captured. In addition to the reasons described above, this was partly also a consequence of the Israeli General Staff's planning, according to van Creveld, or maybe it is better to say a consequence of the lack of planning. Van Creveld states that apparently the supreme headquarters had not thought through the campaign's final objectives to the end. Therefore according to van Creveld, it was only the tactical commanders' sense of the situation that the line that eventually emerged was defensible, including the southern slopes of Mount Hermon as well as two critical hills – Chermonit and Booster in the central Golan.[444] However, it is also obvious that political reasons prevented an extension of operations further towards the Syrian capital of Damascus.

9.5. The war at sea

The Egyptian Navy was several times larger than the Israeli. It was totally re-organised after the 1956 War, mainly on Soviet lines. The most important changes were the procurement of missile boats and the founding of a submarine fleet. When taking into account the slight success of the Egyptian Navy during the Six Day War, it seems, however, that despite the pre-war organisational preparations, the navy was not ready for a large-scale sea war but only for the defence of its home waters. Other Arab countries did not commit their vessels against Israel's naval forces.[445]

According to Louis Williams, the Israeli Navy was a strange combination of highly advanced concepts and very retarded and obsolete weaponry in June 1967. This opinion seems justified. The Israeli Navy was modernising. New missile boats had been ordered. Therefore it is reasonable to suppose that the principles of the IDF operational doctrine that had been developed after the 1956 War were also included in the navy's fighting principles and war plans. However, the new vessels never arrived before the war. Therefore, the Israelis had to rely more on indirect means, on deception and surprise than on technical superiority. When the war erupted, the Israeli Navy was ordered to prevent Egyptian naval operations against Israeli coastal facilities and population centres, to protect merchant shipping to and from their Mediterranean ports, to harass the enemy along the Mediterranean coast and

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[443] R.A.C. Centre Bulletin No 4, p. 27, Young, p. 162 – 163 and Cohen, p. 248.

[444] van Creveld (1998), p. 194.

[445] Dupuy (1992), p. 330 – 331 and Rothenberg, p. 149 – 150.
See also Cordesman & Wagner, p. 15.
According to the authors, Arab naval forces in total were almost seven times larger than the Israeli, the ratio between ships/craft was 172 to 25. It is obvious, however, that the Arab number includes also small patrol boats. In combat efficacy the difference wasn't obviously not so large.

also in Egypt's home waters, and on a lesser scale to provide logistical support for the IDF's operations in the northern Sinai.[446]

In the conditions described above, the Israeli Navy chose a two-part strategy of deception and offence. According to Louis Williams, the deception consisted of transferring landing craft during daytime overland from Haifa to Eilat. At night these vessels were replaced by dummies while real craft were transferred back to Haifa. This operation – without a single shot being fired – was quite effective; it tied down some 30% of the Egyptian Navy in the Red Sea. The offensive part consisted of naval commando operations against Egyptian ships in Port Said and Alexandria; with the former's missile boats forming a real threat to Israel's army installations and population centres. In a way, Israeli vessels patrolling the Mediterranean coast and blocking Egyptian ports can also be seen as a part of an offensive strategy. This action was also effective.[447]

The naval engagements of the Six Day War were minor. The statistics do not indisputably show any sinkings on either side. When comparing the possibilities, actions and results on both sides, the Israelis were quite successful. The Egyptians were passive for almost the whole time, which obviously was a result of several reasons, but one off them was certainly the lack of air force support. The only sea offensive in the Red Sea on 6 June was called off soon after it began because the Egyptians realised the risks without air support. The Israelis, for their part, tried to compensate for their unfavourable force ratio with mobile action. By doing this they were able to separate Egypt's force on two sea fronts. Secondly and more importantly, Israeli patrols and frogmen along Egypt's Mediterranean coast and in its ports and to a lesser degree in the Red Sea were seen as a threat in the Egyptian Navy. Therefore, already on the second day of fighting, 6 June, the Egyptians pulled out from Port Said and withdrew to Alexandria. This eliminated the imminent threat of missile attacks against Israeli targets, and in this way the main mission of the Israeli Navy was fulfilled.[448]

9.6. Evaluations of the military art

Professor Wallach tends to see the Israeli strategy before and during the Six Day War in a Clausewitzian way as does Doctor Shai. A half a year before the war, Wallach published a newspaper article *Policy and the Conduct of War*, where he discussed Clausewitz's theory and objections voiced against this theory. After this, Wallach also tried to publish broader research on Clausewitz's theory on war. To his surprise, he was informed that members of

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[446] Williams (1989), p. 262 and Smithers, p. 20.

[447] Williams (1989), p. 262 – 263 and Kwallek, Jeffrey A: The Operational Commander's Key to Surprise and Victory, Naval War College, Newport RI, June 1994, p. 19 – 20.

[448] Cordesman & Wagner, p. 18 and Dupuy (1992), p. 330 – 331.

the editorial board could not find any points of interest for the Israeli reader in this subject. Obviously, this was also the case in military circles in general.[449]

A month after the war on 15 July, 1967, Wallach gave a broadcast on *Voice of Israel* where he again brought up Clausewitz's name by saying that "the decisive importance of the mutual relationship of policy and conduct of war is self-evident, since we are now only at the beginning of the political struggle in the wake of the military victory." Wallach's statement is controversial without a more thorough study, though it is not against Clausewitz's famous clause. According to van Creveld, at the strategic level the Six Day War was not an instrumental, Clausewitzian war. Despite the fact that Israel had deterrence power that obviously would have functioned and their doctrine at the strategic level was declared to be defensive, the war broke out when policy was inefficient. Therefore it is easy to see things like Professor Handel's concept; Israel's strategy of denial approach fed the possibility of eliminating the growing military threat with pre-emption. According to van Creveld, even provocation against Syria, which Shimon Peres admitted in the mid-1990s, was used before the war.[450]

Below the strategic level, the Clausewitzian connection seems, however, reasonable. Wallach and Shai both stress the doctrine of strategic defence, which the Israelis had adopted between the 1956 War and the Six Day War. According to Wallach, this meant that at the strategic level the doctrine was defensive. In the case of a threat, the defence at the operational and tactical levels was to be put into practise with offensive means. According to Shai, this doctrine imitates Clausewitz's theory of strategic defence where in the case of a threat the defender tries to find out deficiencies in his opponents defence and then concentrate his own efforts on these. The identification of the threat that formed the problem was important in this concept. The location of the centre of gravity of enemy forces played a central role. At the operational and tactical levels, the enemy COG was divided into objectives that were essential to the enemy. However, because these objectives were vital they also formed weaknesses because they were essential to the defence as a whole. Therefore, to eliminate the threat, counter-measures beginning against the tactical objectives formed a chain that continued through the operational level and finally removed the threat at the strategic level. In a way this model of thinking happened in the Six Day War. The threat to Israel was a three-front attack. The centre of gravity of Israel's enemies was Egypt because it had a dominant role among the Arabs. Therefore, Egypt was the main objective. At an operational level, the vulnerable targets were the Egyptian Air Force and its army in the Sinai. Once they were defeated, the rest would be settled one at time.[451]

More often than Clausewitz, Liddell Hart's name is connected to the Six Day War. Professor Gelber recalled that Liddell Hart and his ideas were very

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[449] Wallach, J. L: Voice of Israel (1967), p. 4, interview of Professor, Colonel (ret.) Yehuda Wallach and discussions with Doctor, Colonel (ret.) Hanan Shai.

[450] Wallach, J. L: Voice of Israel (1967), p. 4, van Creveld (1998), p. 197 and Handel, p. 538.

[451] Interview of Professor, Colonel (ret.) Yehuda Wallach and discussions with Doctor, Colonel (ret.) Hanan Shai.

popular in Israel in the early 1960s, including at the tactical level. Correspondingly, Adan states that at that time the "Strategy of Indirect Approach" itself was the art of war, it meant the ability to find and take advantage of opening possibilities. Within this concept the Israelis, especially Generals Sharon and Yoffe used, according to Adan, indirect approach in their operations. Thus, the practical mobility; i. e., the mobility of armoured, mechanised and paratroop formations, were connected to the mobility of the mind, which in Israeli terms meant operational mobility.[452]

In contemporary sources Liddell Hart's name is also often mentioned. In the *Voice of Israel* broadcast Wallach also paid attention to Liddell Hart. Wallach divided Liddell Hart's influence into two and spoke both of mental and operational influences. According to Wallach, the Israelis were "acting on the spur of an indirect approach mentality" during the war. In this model of thinking, indirect approach meant "the mental-intellectual context of this term by the very selection of the time, the direction, the method and the strength of moves that provided the firm base for the operational and tactical moves." Even in May 2000, Wallach still highly valued the "Strategy of Indirect Approach" in the Israeli military art; according to him it has been a way of thinking for the Israelis, and not just a battle technique.[453]

After Wallach's broadcast, Liddell Hart himself was also interviewed by *Israel Today and the Jewish Times* on 18 August 1967. In this article, Liddell Hart said, "the Six Day War was the best demonstration of my theory of the Strategy of Indirect Approach". In its subtler sense of seeking and exploiting the line of least expectation, the Israelis put into action a theory evolved nearly 40 years ago." Later, the front page of the same *Israel Today and the Jewish Times* some two weeks later on 1 September 1967 said that Israel successfully applied Liddell Hart's military theory during the Six Day War.[454]

Approximately simultaneously with the interview mentioned above, Liddell Hart also started to correspond with Israeli military men to get their evaluations of the past war. Among them were Generals Yadin, Laskov, Rabin, Tal, Sharon and Zamir and Colonel Wallach, most of whom Liddell Hart already knew either by having met them in England when they studied there or by having seen them during his visit to Israel in March - April 1960. The items that were discussed concerned both mental and operational subjects, especially in

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[452] Interview of Major General Adan and interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber.

[453] A letter from Yehuda Wallach to Liddell Hart 22nd January 1968, LH 15/5/304, part 2, Wallach: Voice of Israel (1967), p. 2 and 4, Wallach: Obituary of Sir Basil Liddell Hart, p. 5 – 6, Front page, Israel Today and the Jewish Times, September 1, 1967, LH 15/5/315, part 2 and interview of Professor, Colonel (ret.) Yehuda Wallach.

[454] Front page, Israel Today and the Jewish Times, September 1, 1967, and The Perfect Blitzkrieg, Israel Today, The Press on Israel by Newscaster, August 18, 1967, LH 15/5/304, part 2, p. 5.

See also Bond, p. 262.
According to Brian Bond, "the Six Day War in 1967 probably provided the most brilliant examples of the indirect approach in Liddell Hart's lifetime." This statement, although it is obviously also Bond's view of the question, shows Liddell Hart's thoughts in this connection as well.

armoured warfare, and some technical issues. In this correspondence, General Yigal Yadin reveals that all Israeli commanders had studied Liddell Hart's books – Rabin not least. This statement can also be seen in Rabin's letter to Liddell Hart where Rabin says: "You know I am as always most interested in reading everything you write."[455] On the whole, the quotations above and the correspondence also show, however clear the ties between the Israelis and Liddell Hart had been, his keenness to find evidence of the Israeli application of his ideas. Nevertheless, the controversial connection between Liddell Hart and the Six Day War is more easily buttressed than proven wrong.

After the correspondence with the Israelis, Liddell Hart wrote an article entitled *Strategy of a War* in *Encounter* in February 1968. In the beginning of this article, he used the same words that he had used in the interview with *Israel Today and the Jewish Times*: "The whole course of the Israeli campaign, a perfect *Blitzkrieg*, was of particular interest to me because it was the best demonstration of my theory of the strategy of indirect approach..." True, it is easy to find striking similarities between the Israeli moves during the Six Day War and the German *Blitzkrieg* concept. Also, their connection to the "Strategy of Indirect Approach" can be seen but this also shows a good understanding of the situation. In addition, in today's terms the Israeli manner of fighting can well be examined from the viewpoint of manoeuvre warfare theory. The primary idea of the Israelis was to take advantage of enemy weaknesses. This was also in accordance with Liddell Hart's thoughts; he emphasised the importance of taking military actions that would have the effect of throwing the enemy's command and control structure off balance both physically and psychologically. In addition, Bagnall identifies two relevant characteristics in the conduct of Israeli operations: surprise and flexibility. Surprise was achieved at the strategic level by deception and tactically by the rapidity and sustained unexpectedness of the Israelis' subsequent moves. In concrete terms, this can be interpreted as having been a carefully planned and implemented pre-emptive strike by the Air Force in the first phase of the war, whereas all the other principles of deep battle dominated the ground operations. Besides, it seems that the Israelis were more willing to die for their cause despite their unwillingness to tolerate high casualties, as Liddell Hart also noted. In this case the final war objectives took primary place. Therefore, the doctrinal principle of acceptable casualties also took concrete form in this war.[456]

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[455] A letter from Liddell Hart to Yitzhak Rabin 11th August 1967, LH 2/19, a letter from Yitzhak Rabin to Liddell Hart 18th September 1967, LH 2/19, a letter from Liddell Hart to Ariel Sharon 11th August 1967, LH 2/21, a letter from Liddell Hart to Yigal Yadin 11th August 1967, LH 2/23, a letter from Yigal Yadin to Liddell Hart 29th August 1967, LH 2/23, a letter from Liddell Hart to Brigadier Zamir (Israel's Military Attaché) 6th October, 1967, LH 2/25 and a letter from Brigadier Zamir to Liddell Hart 24th October, 1967, LH 2/25.

At least Yadin, Rabin and Sharon got similar letters from Liddell Hart.
Something of this correspondence has to also be categorised as typical compliments, but despite this some evidence is revealed.

[456] Liddell Hart, B. H: Strategy of a War, Encounter (1968), p. 17, Bagnall, p. 213, Gissin, p. 164 and Bond, p. 240.

Bagnall's use of the term strategic must be understood as being equivalent to operational. As a consequence of the demonstration of force, strategic surprise wasn't possible anymore.

At the operational level, the Six Day War is often compared to the German offensives in the early years of WW II. According to Kadish, contrary to 1956, Israeli armoured warfare in the Six Day War was not based on the initiative of local commanders anymore but was according to the principles that were created between these two wars. According to Michael Howard and Robert Hunter, these principles were speed, surprise, concentration, security, information, offence, training and morale. The rest relied on innovation, on appreciation of the situation, as Doctor Pa'il described it. These principles were quite well adopted by the IDF officer corps at all levels before the war. In addition, while Peter Young compares the Six Day War to the British offensive in North Africa in 1940 – 1941, as already discussed, and also to the German campaigns of the 1939 – 1941 period, a French General André Beaufre does the same in his article *Une Guerre Classique Moderne: La Guerre Israelo – Arabe* in *Strategie*. The destruction of the defender's air force, followed up by relentless armoured thrusts, was implemented in a quite similar manner. According to Beaufre, the only exception in 1967 was the compressed time frame.[457]

Dan Shomron, the IDF Chief of Staff during the late 1980s and who was in charge of the IDF battalion that first reached the Suez Canal during the Six Day War, also sees the connection between the Germans and Liddell Hart. According to Shomron, the Six Day War was a synthesis of Liddell Hart's and Fuller's philosophy and the German, especially Rommel's and Guderian's, practice. According to him, in the Six Day War the Israelis fought against their opponent's psyche like the Germans did against the Poles, French and Soviets during the early years of WW II. Deep strikes against vulnerable enemy targets in the rear formed the key to the success. Professor Wallach shares General Shomron's opinion. In the *Voice of Israel* broadcast, Wallach said "the mobility of the Armoured Corps was used in accordance with the best tradition of armour operations, as theoretically formed by the Englishmen Fuller and Liddell Hart, and actually applied by the Germans Guderian and Rommel." In the case of the IDF application, the tanks pushed through enemy defences without paying much attention to their flanks and rear, knowing that sooner or later the deep penetration into enemy dispositions in the rear would lead to the collapse of the enemy. Therefore according to Wallach, the Israeli method of deploying armour also deserves the title of indirect approach.[458]

In the leaflet, Liddell Hart said in addition that "the tactical talent of the Israeli Army is the highest that I have ever met, even above the level of German Army, which I put next in this respect."

[457] Bagnall, p. 198, interviews of Professor Alon Kadish and Doctor, Colonel (ret.) Meir Pa'il, Howard, Michael and Hunter, Robert: Israel and the Arab World: The Crisis of 1967, The Institute for Strategic Studies, London 1967, p. 39, Young, p. 183 – 184 and Beaufre, André: Une Guerre Classique Moderne: La Guerre Israelo – Arabe, Strategie July – August 1967, p.19.

[458] Interview of Lieutenant General Dan Shomron and Wallach: Voice of Israel (1967), p. 2 and 4.

See also a letter from Yehuda Wallach to Liddell Hart 29th November, 1967, a letter from Liddell Hart to Yehuda Wallach 7th February, 1968, Connell, John: Israel: Western Defence Bastion, The Anglo-Israel Association, London 1968, LH 15/5/307, p. 11 and Wallach: The development of Israeli Armor Doctrine.

The Israelis neither relied upon the concept of a single blow, nor did they lose sight of the supreme importance of surprise. Despite the fact that the possibilities for a strategic surprise had already vanished during the May crisis after mobilisation, the IDF succeeded in compensating for the loss of strategic surprise by creating a series of operational and tactical surprises. The successful air-strike gave the IDF operational freedom, but, nevertheless, instead of concentrating for the attack the Israelis dispersed their forces to selected points and only concentrated after the breakthrough had been achieved. According to Yigal Allon and Leo Heiman, this all was a consequence of the IDF fighting doctrine. However, while Allon, like Wallach, analyses the war at strategic and operational levels and tends to see the "Strategy of Indirect Approach" as occupying a central place, Heiman looks at the battles and stresses the role of tanks, as did also General Laskov.[459]

Haim Laskov also wrote a letter to Liddell Hart on 22nd August 1967 to analyse the past war at Liddell Hart's request. In this letter, Laskov favoured the power of tanks and says in this context that the core of Liddell Hart's thoughts lie in tanks and that their most versatile role was put to the test by Tal's division, which at that time best represented the Israeli armoured forces. Instead, indirect approach is not mentioned. Nevertheless, in his letter on 20 September 1967 to Liddell Hart Laskov also acknowledged how Liddell Hart's books *The Tanks* had been a source of innovation for Israeli tank officers. Therefore, because Liddell Hart's writings on armoured warfare also include his ideas on indirect approach, this subject can be seen as having been behind the Israeli application of armoured warfare too, at least indirectly.[460]

In his letter to Liddell Hart, Wallach commented on Liddell Hart's article in *Encounter*. This article must have been a manuscript because it was published only some two months later. On the whole Wallach agreed with Liddell Hart's view. Nevertheless, in this article Wallach revealed his reluctance to compare the IDF's armoured warfare with *Blitzkrieg*. However, Wallach admitted that he maybe was a little bit too oversensitive in this matter. On 7 February 1968, Liddell Hart explained that the word *Blitzkrieg* was the best way to describe this type of warfare. Originally, in the 1930s the name had been "lightning warfare".
In Wallach's paper *The development of Israeli Armor Doctrine*, which ends with the wake of the Six Day War, Liddell Hart is, however, not mentioned, obviously because this paper concentrates mainly on the development of organisations.

[459] Allon: The Last Stage of the War of Liberation (1967), p. 9, Allon (1970), p. 83 and 85 – 86 and Heiman (1968), p. 19.

[460] Letters from Haim Laskov to Liddell Hart, 22nd August 1967, LH 2/13 and 20th September 1967, LH 2/13, a letter from Liddell Hart to Haim Laskov 12th September 1967, LH 2/13 and Wallach: Obituary of Sir Basil Liddell Hart, p. 6.

The letter that Liddell Hart wrote to Laskov in August 1967 does not exist in the Liddell Hart files at King's College. However, Wallach mentions in his obituary of Liddell Hart that such a letter had been written to Laskov. According to Wallach, in this letter Liddell Hart wrote: "It has always been with mixed feelings that I have read the tributes from Guderian and other German Generals to my influence on their ideas and the methods of armoured warfare they practised in WW II. But there have never been any such mixed feelings, and only pleasure, in seeing how the leaders of Israel have applied those ideas, even still better."
See also a letter from Liddell Hart to Israel Tal 12th September, 1967, LH 15/5/304, part 2, a letter from Israel Tal to Liddell Hart 30th November, 1967, LH 15/5/304, part 2, letters from Yehuda Wallach to Liddell Hart 29th November, 1967, LH 2/22 and 22nd January 1968, LH 15/5/304, part 2 and letters from Haim Laskov to Liddell Hart 22nd November 1967 and 19th March 1968, LH 2/13.

According to Heiman, the IDF armoured doctrine in the Six Day War was based on the HRSH principle where the letters represent the Hebrew words for breakthrough, pursuit, tanks against tanks and destruction. Heiman also sees that the HRSH concept foresaw using the same units and formations – tanks in this case – for all four tasks rather than assigning different units for each stage, which actually happened with several exceptions on all fronts. This can also be seen in Major General Israel Tal's analysis *Israel's Defense Doctrine. Backgrounds and Dynamics* in *Military Review*, March 1978. According to Tal, in the Six Day War crew-served weapon systems carried the assault and brought the Israelis victory in every theatre with superiority in firepower. This latter shows quite well the growing emphasis of seeing tank formations as the best solution to Israel's defence problem. Doctor Gawrych also supports this view. According to him, Israeli tank crews exhibited mastery of fire over their Egyptian counterparts.[461]

From the operational point of view, the action of General Tal's division was, however, more an exception than a rule in the IDF during the Six Day War. Although Tal's tanks were – as in classic armoured warfare – concentrated against the Egyptian defence lines to take advantage of the shock power of the tanks, the way they were used was more of less direct. Such was also the case in the breakthrough phase on the Golan. Instead, flanking, encircling and blocking movements were more usual in other formations which, however, were started with powerful preparatory breakthrough operations in many places. In any case, in pursuits tanks were used for swift penetrations without taking much care of the flanks. Thus, despite the growing trust in the firepower and protection of the tank, the role of movement was also important in the Israeli armoured doctrine in the Six Day War. The main reason for this was – as had been in the Sinai Campaign as well – Israel's inferiority in manpower and the consequential vulnerability to losses. Therefore, direct breakthrough battles were avoided if possible despite the fact that enemy tanks were already seen as the main objective of tanks. However, the plan was that enemy tanks would meet in movement where Israel's tactical and technical superiority would be revealed. In addition, tanks implemented the doctrinal demands of offence, transferral of battles to enemy soil and the aim of achieving a decisive victory

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Originally Liddell Hart turned to General Tal for a description of the Israeli armoured warfare during the Six Day War. General Tal advised Liddell Hart to turn to Wallach who at the time was writing the history of the Israeli Armoured Corps. Finally, at the end of 1967 Liddell Hart got Wallach's answer. Mainly this memorandum contained battlefield descriptions. In this memo Wallach, however, stressed that the Israelis had acted on the spur of an indirect approach mentality.

In the latter letters from Laskov to Liddell Hart discussions about IDF armour continued with organisational matters. After the Six Day War, Laskov was still thinking about the ratio of forces to space; combinations to commit as large a number of tanks as possible to the battle at the time. The experiences of the war showed that despite air superiority the number of Israeli tanks that fired, compared to the number of tanks that were fit for combat but did not fire, was quite low. Therefore Laskov opted for Liddell Hart's ideas of having squadrons of four tanks.

In the reply Laskov wrote: "I do have a feeling that on armour you sit back, chuckle and wonder what fate and Israelis did to vindicate a life long teaching and preaching."

[461] Heiman (1968), p. 19, Tal (1978), p. 27 – 28 and Gawrych, George, W: The 1973 Arab-Israeli War: The Albatross of Decisive Victory, Leavenworth Papers number 21, Courtesy of the U.S. Army Center of Military History, Washington, D.C. 1996, p. 7.

rather well in the war. Thus, the growing appreciation of armour in the IDF had a rather natural background. In any case, it should not be forgotten that the IDF's superiority also rested on the ability of its tactical and operational commanders to combine the elements of fire and movement together and demonstrate initiative and innovative tactics in combat, as Gawrych puts it.[462]

The IDF's superior performance when compared to its counterparts was also a consequence of the Israeli command process. According to Martin van Creveld, the command system that made the success of 1967 possible is best understood in terms of a series of balances. This means the ability to use delegated decision power at the tactical level of warfare which was – and still is – a precondition in maintaining the initiative in mobile warfare, and a reliable feed-back system that is needed for forward-looking decisions at the operational level. According to van Creveld, this all was organised in the IDF during the Six Day War as follows: From the frontal commander Major General Gavish downward, commanders on the Egyptian Front positioned themselves far forward, making decisions on the spot and relying on oral orders. This course of action can also be extended to the other two fronts. Written orders and reports were drawn up only for the records of the next highest headquarters. Mainly the reporting system from the tactical level upwards was based on radio networks that linked commanders to their superiors and also to parallel commanders in the same operation to each other, at least at the divisional level on the Sinai front. In this way the Israelis were able – despite certain cut-offs in the network – to check and control the independence granted to subordinate commanders. On the whole, General Gavish has been largely forgotten, as was the case with the OC Southern Command during the 1956 War as well. One reason for this might be the operational independence of the divisions and brigades. Southern Command had little to do with the operations themselves. It only transmitted the course of events to the General Staff where the overall plan for the war had been produced. A quite similar situation seems to have also occurred on the other fronts.[463]

Finally, Handel names seven major sources for Israeli military strength in the 1967 War. They were excellent planning, excellent use of time, speed, good matching of ends and means, motivation, night fighting, ideal size of formations and good command, control and communication facilities. This list seems to be a little bit exaggerated. Obviously the success was partly a consequence of the autonomy of the formations because cuts in communications were not rare. This caused too much reliance on improvisation, as Handel also notes, which for its part shows that exact planning was not extended to the end of the war. This shows that the ends and means were not in total control at the strategic level. Therefore the situation at

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[462] Gawrych (1996), p. 7.

[463] van Creveld (1985), p. 200 and 202 – 203.

According to General Gavish, the only way to observe the developments at first hand was to accompany the units, to look into subordinates' eyes and to listen to their tone of voice. In the meanwhile Gavish's forward command echelon also transmitted the picture from the battlefield to the General Staff.

the end of the war was more a final outcome of operational success than a long-lasting grand strategy.[464]

[464] Handel, p. 566 – 568.

NOTIFICATION

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10. NO PEACE, NO WAR

The conquests of the Six Day War left Israel in a completely new situation. The IDF had demonstrated its military superiority and defeated its enemies' armed forces thoroughly and had meanwhile extended Israel's borders on all three fronts. For the first time in its history, Israel had strategic defensive depth between its population centres and the neighbouring Arab states. In accordance with this, Israel had reason to be optimistic about the coming years. However the development of the military-strategic situation did not come up to expectations. The period between the Six Day War and the next all-out war in 1973 was one of the longest periods of conflict experienced in the region. From July 1967 onwards, the Israeli-Egyptian front was a stage for sporadic artillery fire. Sometimes, there were also very heavy naval clashes – the most famous of them being the sinking of the Israeli destroyer *Eilat* in October 1967 – and air patrols. The activities of both armies increased in March. Commando raids became almost daily events and finally air force elements were also committed to the fighting. Finally, the fear of escalation put a stop to the hostilities in August 1970.[465]

The military-strategic situation in Israel after the Six Day War was not accepted unanimously. At the strategic level, the war had been a question of survival from the Israeli point of view. At the operational level, however, the IDF had extended Israel's borders significantly and after the war the situation was obviously confusing. In addition, the advantages of interior lines were not as striking as they had been before 1967; additional territories had diminished the possibilities of concentrating forces, including the Air Force, on one threat at a time. This led to a 25% growth in the strength of the peace-time active army during the period between 1967 and 1973. According to van Creveld, the military victory in 1967 seemed to have taken the Israeli public and government by surprise and no thought had been devoted to the question of how to terminate the war itself and how to deal with occupied territories. Therefore Moshe Dayan, the Minister of Defence, consulted several people for advice on the coming decisions. First, there were people who thought that Israel should be prepared to return to the situation that prevailed before the war. Yigal Allon, deputy Prime Minister at the time, and Colonel Shlomo Gazit, Head of the Planning Branch of IDF Intelligence, were among those who supported this view. Yigal Allon emphasised strategic defence; in his opinion, Israel should not seek a military victory at the expense of peace treaties with effective security arrangements. Therefore, the transition from the cease-fire agreements to full peace-treaties should be carried out in one step. Nevertheless, the majority – including Colonel Yuval Ne'eman, who was also consulted by Dayan and who wrote the report *This War of Our Resolution and*

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[465] Thornberry, Jerry R: The Arab-Israeli Conflict: The War of Attrition and Preparations Preceding the October 1973 War, Master thesis (military art and science), Fort Leavenworth, Kansas 1986, p. 109 and Herzog, Haim: The Arab-Israel Wars. War and Peace in the Middle East from the War of Independence through Lebanon, Vintage Books, New York 1984, p. 198.

See also Dupuy, p. 349.

On 21 October 1967, an Egyptian *Osa*-class missile boat sank the destroyer *Eilat* close to the Egyptian port of Port Said.

how to Safeguard its Achievements about this question – supported the viewpoint that Israel should not return the territories it had just conquered. This opinion was to guide the direction of Israel's security policy up to the Yom Kippur War in 1973.[466]

Before the Six Day War, Israel's military strategy had been based on the deterrence power of the IDF, which was expected to prevent Arab offensives.[467] This had not, however, worked; war had broken out. Nevertheless, the success in the war strengthened Israel's reliance on her own military strength. In addition, the new operational depth gave, at least in theory, the Israelis more flexibility in their defensive concepts. However, the practice was different. Although strategic concepts were re-evaluated after the Six Day War and the IDF underwent technical modernisation in many ways, on the whole, the change was rather slight. Haim Herzog described the situation in Israel in the late 1960s quite aptly by saying that the atmosphere reflected "a false sense of security and a strategic option". Besides, those who favoured abandoning the conquered territories in exchange for peace were also supporters of deterrence. This is revealed in *The Making of the Israel's Army*, where Allon emulates Sun Tzu's thoughts by saying: "The maintenance of a convincing balance of forces is one of the principal ways of maintaining a reasonable chance of avoiding a new major war."[468]

In January 1968, the Six Day War-era Chief of Staff Lieutenant General Yitzhak Rabin resigned and was succeeded by Lieutenant General Haim Bar Lev. Rabin shared Allon's views. In a press interview, the resigning Chief of Staff said that before the Six Day War the IDF had not been a deterrent force. After the war, the situation had changed so that the new borders that Israel had created, were, from a military point of view, ideal. Despite this Rabin, like Allon, admitted that although another war was not inevitable, Israel had to prepare as if it was. In the same breath, the incoming Chief of Staff Bar Lev continued by saying that it was still true that in an Israeli context "the best defence was attack, and in the event of another war the Israeli Army would once more fight on the enemy's soil." On the whole, this all shows the unchanged war-strategic and operational doctrine, at least in military circles.[469]

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[466] Van Creveld (1998), p. 201 – 203, Allon (1970), p. 96 – 97 and Ne'eman: This War of Our Resolution and how to Safeguard it's Achievements, p. 3 – 4.

In the case of the West Bank and Jerusalem, there were also ideological (religious) reasons for keeping these areas under Israeli control.

[467] Safran, Nadev: Israel – The Embattled Ally, Harvard University Press, Cambridge Massachusetts 1978, p. 235.

[468] Allon (1970), p. 96 and Herzog (1984), p. 195.

The original Sun Tzu clause that lay behind Allon's phrase was: "The theory of war teaches us not to rely on the possibility that the enemy will not come, but on preparedness to meet him – not to rely on the prospect that he will not attack, but on the fact that we have made our position invincible."

[469] Jewish Observer and Middle East Review, January 5, 1968: Rabin's Farewell to Arms, LH 2/19, p. 7 and Prepared for all Possibilities, General Barlev Takes Command, LH 2/19, p. 8 and Israel Today 5.1.1968, Bar Lev takes over command, LH 2/19.

10.1. The War of Attrition

Less than a month after the cessation of the hostilities of the Six Day War, the Egyptians started their first artillery strikes against Israeli targets on the east bank of the Suez Canal. Gradually this exchange of fire led to the so-called War of Attrition between Israel and Egypt in March 1969 and extended up to August 1970 when a cease-fire was declared. The War of Attrition can be described as having been commando attacks, artillery bombardment, missile strikes and air force and navy actions on both sides. In the meantime, the activities of the Palestinian guerrillas also intensified and the IDF had to divide its efforts to meet two different threats.[470]

From the Egyptian point of view, the objectives of the War of Attrition were 1) to decrease the Israeli technological and military superiority, 2) to make Israeli retention of the lands too expensive in terms of monetary losses and casualties and 3) to attain parity between the IDF and the Arab armies. According to these aims, the Egyptians tend to divide the War of Attrition into four phases. They are: 1) Challenge, a demand for Israel to fight (June 1967 – August 1968), 2) Defensive rehabilitation or active defence (September 1968 – February 1969), 3) War of Attrition (March 1969 – August 1970) and 4) No war, no peace (August 1970 – October 1973). The second and third phases were the most important to the Egyptians; they were meant to rebuild the armed forces that had been battered in the 1967 War to prepare the country for even an all-out war in the coming years. At the operational level, the Egyptians invested in two main facts; making use of the proximity of forces on the banks of the Suez Canal and raising Israel's losses in terms of lives and equipment, and secondly neutralising Israel's air superiority by building a surface to air missile (SAM) network.[471]

From the Israeli point of view, the War of Attrition between March 1969 and August 1970 is usually divided in two ways: strategically and operationally according to the means that were used. Strategically the war can be divided into the period from March 1969 to December 1969, which was characterised by political dominance over military considerations. In this phase, the tendency was to plan the military countermeasures so that an escalation to an all-out war could be avoided. The second phase started in January 1970 and extended up to August 1970. In this phase, Israel put military considerations before political ones. According to Yaacov Bar-Siman-Tov, this choice was mainly the outcome of the strategic gains secured earlier. The decision to send bombers deep into Egyptian territory was intended to exploit Israel's strategic

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[470] Farris, p. 51, Dupuy, p. 361 – 362 and Thornberry, p. 100.
Statistics on the Palestinian strikes can be seen for example in O'Neill, Bard E: Armed Struggle in Palestine. A Political-Military Analysis, Folkestone 1978, p. 237 – 241.
Guerrilla strikes against Israeli targets both in the West Bank and in the Gaza Strip intensified radically after 1968 and extended up to the end of 1970. It is easy to tie these activities to the War of Attrition. However, Israeli countermeasures also became more effective at the same time.

[471] El Badri, Hassan, El Maghoub, Taha, Dia el din Zohdy, Mohammed: The Ramadan War 1973, T. N. Dupuy Associates Inc., Dun Loring, Virginia 1978, p. 10 and Thornberry, p. 111.
According to Gawrych, El Badri's book is a semi-official history of the Yom Kippur War.

superiority and translate the military gains into political ones. This reflected the still prevailing denial strategy. It was thought that the strategic superiority would bring the war to an end by deciding the outcome both militarily and politically. Operationally the war can be divided into four phases. The first period from March 1969 to mid-April 1969 can be described as having been composed of artillery and counter-artillery strikes that were similar to those that had occurred earlier after the Six Day War. In mid-April, the Israelis started their commando raids on the Egyptian side of the Suez Canal. These actions continued up to the end of the year. In the third phase, which began while the commando raids still continued, the Israelis activated their Air Force from the beginning of July 1969 against the Egyptian air defence missile system. Finally, after January the Israelis extended the operations of their Air Force to also include strategic targets deep inside Egyptian territory.[472]

According to Zvi Lanir, Israel had two political aims in the war: first, to bring the fighting to a halt without being forced to cede the conquered land and second, to prove to the Egyptians that this type of warfare against Israel would also be disastrous. These war aims were not fulfilled. Israel's strategic, but also operational, tactical, organisational and administrative thinking, was still primarily geared to a short war against a particular type of enemy. This caused a problem. It was impossible to prevent a total war by defeating the enemy by capturing territory or by destroying his forces in this war since taking the area on the Egyptian side of the Suez Canal would have contradicted Israel's political and military conception of "secure boundaries", as Lanir calls this concept. This meant that operational demands were also mostly defensive and the essential condition for a decisive victory; i.e., annihilation of the enemy, was therefore almost totally absent in the strategic plans. Thus the concept of strategic depth was also irrelevant because Israel's operational doctrine still supported preventing the enemy from making any territorial gains and improving cease-fire lines as a bargaining chip after the war.[473]

10.1.1. Defence or offence; disputes over the operational doctrine

At the end of 1968, several months before the violations of the 1967 cease-fire escalated to the War of Attrition, it became clear in the IDF that if the army had to stay along the canal, and safeguard the lives of its soldiers, it had to consolidate. This viewpoint was to cause intense disputes over the fundamental operational principles of the IDF because it was more a question of digging-in than consolidation. Building fortifications was something that was strange to the IDF, both technically and especially mentally. According to the principles of the "Constant Flow" doctrine, cover from enemy fire was not based on fortifications, but on mobility and mobile operations.[474]

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[472] Bar-Siman-Tov, Yaacov: The Israeli-Egyptian War of Attrition, 1969 – 1970. A Case Study of Limited Local War, Columbia University Press, New York 1980, p. 117 – 118, 68 – 69, 71, 73 – 74, 81, 85 and 172.

[473] Lanir, p. 29, Tal, p. 3 and Bar-Siman-Tov (1980), p. 59 – 60.

[474] Schiff (October Earthquake), p. 136 – 137.

There were two main schools on how best to defend the Sinai. The first school, whose major representatives were the Chief of Staff, Lieutenant General Bar Lev, Major General Gavish, OC of the Southern Command, and Major General Adan, Commander of the Armoured Corps, believed in a defence that was partly static and partly mobile. The defensive part of this concept was based on a forward fortified line along the water line. This force was to be backed by a mobile armoured reserve in depth. The second school, headed by Major General Tal – then developing armoured warfare concepts at the Ministry of Defence – joined by Major General Sharon, who was Head of the Training Department at the time, was in favour of using concentrated armoured formations in depth in the Sinai for counter-offensives out of Egyptian artillery range. In this concept the forward area; i.e., the Israeli side of the Suez Canal, would only have been lightly held by patrols.[475]

Those in favour of fortifications were trying to solve two problems: how to secure the line under static warfare conditions in a limited conflict, like a war of attrition, and how to also prevent a general Egyptian crossing. According to these concepts, the school led by Bar Lev saw the fortifications as one component in the overall defensive network. Concrete constructions were not meant to stand up to a large-scale Egyptian crossing. However, a permanent presence along the length of the canal in the strongholds would prevent crossings by small forces. In case of an all-out attack at points where there was a high degree of likelihood of Egyptians attempting to cross, the outposts would perhaps be able to disrupt the Egyptians' moves to some extent, delay their penetration in depth in the Sinai, and serve as a foothold for further IDF operations. In the event of an attempted Egyptian crossing, these positions were to be augmented by forward deployed, combat ready, armoured units that would fill the gaps in the thinly manned defensive line while extra armoured reserves would be ready in depth in the Sinai to be used in counter-strikes. In addition, the strong points were to allow the Israelis to keep watch on army deployments on the Egyptian side of the Canal.[476]

In September and October 1968, the Egyptians conducted a massive artillery bombardment against Israeli targets on the eastern shore of the Suez Canal. At the end of 1968, immediately following the bombardment, the IDF began a huge consolidation operation. This was the birth of the so-called Bar Lev Line. The first school, whose principal advocate was the Chief of Staff, General Haim Bar Lev, prevailed, though on the whole the decision was more political than military. The main justification behind the solution was that Israel didn't want to give up the Sinai, not even partly because the Egyptians might have used this as a weapon in peace negotiations in the future.[477]

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[475] Herzog, Chaim: The War of Atonement, Weinfeld and Nicolson, London 1975, p. 5 – 6 and van Creveld (1998), p. 211 – 212.

[476] Bar-Siman-Tov (1980), p. 62 – 63, Schiff (October Earthquake), p. 138 – 139 and Gissin, p. 330.

[477] Van Creveld (1998), p. 211 – 212.

See also Bar-Siman-Tov (1980), p. 64 – 65 and interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber.

Major General Adan was put in charge of the planning and very soon the OC of the Southern Command, General Gavish, accepted Adan's solution and submitted it to the General Staff for approval. Under harassing sniper and artillery fire, the fortifications were completed during the winter of 1968 – 69. Because the construction of fortifications was quite unfamiliar to IDF engineers, they mostly learned the technique from Red Army training manuals. Fortifications, 31 in total, called *maozim* (stronghold) were built at an average interval of about five kilometres along the Canal line: each manned by a small infantry force with heavy machine guns and even antitank guns, well protected against incoming artillery and able to observe any Egyptian moves. However, these strongholds were only to be an early warning line while the actual defensive capability was to rest on mobile armoured patrols between the strongholds, supported by extra armour and artillery deployed to the rear.[478]

10.1.2. From tactical raids to strategic air-offensives

In the first month and a half of the War of Attrition, Israeli operational military activity was limited to counter-artillery fire. However, static defence of the canal line gave the initiative to the Egyptians and lead to losses from massed artillery fire despite the cover that the newly-constructed Bar Lev Line offered. This rather conflicted with the operational doctrine, which emphasised the search for the initiative with offensive means and flexible thinking. When the Egyptians increased their commando raids along the Canal in the second half of April, Israeli opinion grew to believe that artillery defence was not enough to stop the hostilities. These calculations led to the adoption of a policy of reprisals, and in mid-April the IDF's commando raids were started. According to Luttwak and Horowitz, the aim of these raids, which were anything but conventional, was to

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According to Bar-Siman-Tov, Israel's political leadership recognised that mobile defence in depth in the Sinai was preferable to static defence from the military point of view. Despite that, the static system of defence was chosen. A defence on the bank of the Suez Canal coincided with the concept of secure borders.
Gelber also admits that the construction of the line was more political than military; Israel had to be able to control the Sinai and prevent freedom of movement by the Egyptians east of the Suez Canal. Gelber also saw that there were intense disputes about the placement of the line. The fact that the main bulk of the fortifications were not right on the shore, but in its vicinity, was also a political decision. A strong fortified line right on the waterline was seen as being too provocative, although from a purely military point of view – if the doctrine was to hold the line with defensive means – the decision to fortify the waterline would obviously have been the right solution.

[478] Williams (1989), p. 167 and 196, van Creveld, p. 225, Schiff (October Earthquake), p. 136 – 137, Adan, p. 44 – 49 and interview of Major General (ret.) Avraham Adan.
According to Adan, the study of Soviet manuals, which began in the 1950s, was still the practise after the Six Day War. This played a central role in developing the doctrine of the Armoured Corps, which Adan commanded at the time. Therefore, it is not amazing that fortification techniques in Soviet manuals were also studied.
See also Dupuy, p. 359.
According to Dupuy, there were a total of 30 strongholds, including two south of the Canal on the Gulf of Suez and one to the east on the Mediterranean coast.

deflect the Egyptian offensive with destabilising attacks on all sectors but the Canal.[479]

At the strategic level, Israel was not prepared for this type of warfare. The fear of escalation prevented the use of the existing doctrine. The decision to stay in a rigid defence on the Suez Canal tied the hands of operational commanders and more served the Egyptian aims – exhausting Israel's military and economic resources. This only left the Israelis with the possibility of pursuing countermeasures at the tactical level, though in the final phase of the war the IAF was also used against strategic targets. Therefore, in 1968 – 70 the IDF had, according to Luttwak and Horowitz, to devise new tactical methods, retrain officers and men, absorb new equipment and do all this while fighting a conventional war on the Suez front and a counter-guerrilla war on all three fronts.[480]

At first the Israeli commando raids were directed both against civilian targets, like power plants or oil refineries, and military targets in the vicinity of the Egyptian side of the Suez Canal. At this stage, aerial operations were limited, compared to what happened later in the war. The Egyptians also refrained from using their Air Force, obviously because they judged that it was not yet ready to confront the Israeli Air Force. From July 19 onwards Israel changed the objectives of the raids to cover only military targets like radar installations, military camps and naval ports and extended the area. Up to the end of the year, the IDF carried out ten raids deep into Egypt. The main aim of these actions was preventive: to make corridors for the Air Force strikes that were started in July, though still only on a limited scale against targets along the Canal, and to reduce Egypt's possibilities for transporting her commandos to the Sinai. Targeting the raids more deeply in the Egyptian inland can also be seen as having been strategic, they were meant to show that no targets in Egypt were safe from the IDF. According to Israeli sources, the raids were mostly successful, and there is no reason to doubt why this should not have been so. However, from the viewpoint of the war, their effect on the war itself was minimal because they were tactical in scale and therefore not enough to stop the war.[481]

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[479] Bar-Siman-Tov (1980), p. 68 – 70 and Luttwak & Horowitz, p. 314.

At the beginning of April 1969, the Israeli leadership shared the opinion that they could carry out a gradual escalation of military activity without changing the territorial status quo and the essential character of the static War of Attrition. However, the IDF and the Israeli public were also increasingly demanding that the defensive strategy should be called off and new initiatives should be adopted to break down increasing Egyptian self-confidence. This also coincided with Dayan's, who at the time was Minister of Defence, opinions. Early in May 1969, Dayan raised the possibility of abandoning the defence at the operational level for the first time.

See also Schiff (October Earthquake), p. 137.

When the War of Attrition began, the Egyptians had, according to Schiff, noted the loopholes of the strong points and neutralised them. Men were injured alongside the slits, and there was no alternative to sealing them. However, if the loopholes had been constructed to face the flanks, instead of the Canal, the situation might have been different.

[480] Luttwak & Horowitz, p. 333.

[481] Bar-Siman-Tov (1980), p. 99 – 101 and Thornberry, p. 35 and 37.

When examining the tactics that the Israeli commando units used, it can be noted that they had striking similarities to Wingate's teachings; bold, non-schematic raids deep into the enemy rear, and often at night. Therefore, it is not surprising that Major General H. E. N. Bredin, Wingate's deputy in the S.N.S., commented in the *Jewish Observer and Middle East Review* in October 1969 that the Israeli operations in the Upper Nile were like Wingate's operations three decades earlier.[482]

On 20 July 1969, the Israeli Air Force entered the war as an active military element. This change was a consequence of the Israeli perception of the nature of Egypt's war aims; an Egyptian crossing of the Canal was seen as more a possibility after that point. The second reason was the increasing Israeli losses. Once Israel had decided that a crossing might be possible, she had, according to Bar-Siman-Tov, only two military alternatives at her disposal: a large-scale land operation over the Canal to hit the Egyptian forces deployed along the Canal, or limited use of the Air Force for the same purpose. The Air Force was chosen because of the fear of escalation.[483]

Bar-Siman-Tov has divided the IAF bombings between July and December 1969 into three phases according to the targets. Simplifying, the main aim of the IAF operations was to wipe out the antiaircraft defence system along the canal, destroy outposts and reduce the artillery. The final aim was to secure absolute air superiority, which would have eliminated the possibility of an Egyptian crossing since without the cover of air defence it would have not been possible. According to Luttwak and Horowitz, there was also a political aim: to weaken President Nasser's standing as a war leader.[484]

According to Major General Ezer Weizman, Air Force personnel strongly opposed using the Air Force because of the Egyptian missile systems along the canal. Besides, there was also uncertainty about the tactical effectiveness of bombing Egyptian ground targets such as infantry, gun and mortar emplacements. The Air Force command also opposed an operation by the Air Force without a plan to use the ground and armoured forces. As a matter of fact, according to Gunther Rothenberg, air commanders repeatedly urged that conditions were suitable for a major crossing to destroy considerable portions of the enemy line. Nevertheless, the government refused to permit such an action for political reasons.[485]

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[482] Bredin, H.E.N: Return to Ein Harod, Jewish Observer and Middle East Review, October 17, 1969, LH 15/4/486, p. 20 - 21.

See also Williams (1989), p. 170 – 171 and Daily Express 3 January 1970, LH15/5/315, part 1.

One of the best examples of the Israeli commando raids was the capture of a Soviet-made *P-12* radar in Ras Gharib on the western coast of the Gulf of Suez on 26/27 December 1969. In this complicated operation, heli-lifted paratroopers stole and transferred this modern radar to Israel and onwards to United States for further examination.

[483] Bar-Siman-Tov (1980), p. 81 and 86.

[484] Ibid, p. 85, 88 – 89 and 91 and Luttwak & Horowitz, p. 322.

[485] Bar-Siman-Tov (1980), p. 85 and Rothenberg, p. 172.

Weizman's comments cited in Weizman, Ezer: Thine the Sky, Thine the Land, *Ma'ariv*, Tel Aviv 1975, p. 312.

The result of the air actions was, however, that the IAF destroyed almost the entire Egyptian air defence system, which included radar sites, *Sa-2* batteries, radar directed guns and other support facilities. In addition, serving as flying artillery, the Air Force was able to demolish most of the Egyptian artillery emplacements and major supply depots along the Canal.[486]

The final phase of the War of Attrition consisted of IAF's strategic bombing deep inside Egypt. Despite the tactical success in the latter part of 1969, the hostilities didn't completely stop and the protracted war threatened the strategic stability of the region. Therefore the IDF supreme command proposed three alternatives: 1) to initiate a large-scale land operation and to capture Ismailia, 2) to initiate a limited operation and to capture the area between Qantara and Port Said or 3) to step up the air raids in scale and depth. All these choices meant a change from a limited offensive strategy to a less limited offensive strategy. Israel sought a swift military decision. The third alternative, IAF raids deep inside Egypt, was agreed upon. The main reason was that this solution was less escalatory, though it could also be effective because it would have an effect on Egyptian citizens. In this way, this strategy shares characteristics with the "Strategy of Indirect Approach". In addition, the IDF did not have bridging equipment at its disposal at the time, which made crossing operations at least questionable, especially when weighing the objectives and the losses.[487]

At first the IAF raids focused on large military camps near Egypt's main cities – Cairo, Ismailia, Inshâs and Hilwân. According to the IAF Commander-in-Chief, Brigadier Mordechai Hod, the main aim was to break the will of the Egyptian citizens. The long-range American-made *F-4 Phantom* attack planes, which became operational in the IDF in the beginning of 1970, made these missions possible. After March 1970, the raids focused on the Nile Delta where the main targets were *Sa-2* missile sites and radar stations. However, despite

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As a result of the disputes, General Weizman, the ex-IAF commander and the Chief of Operations at the time, left the service.
See also Cohen, p. 289.
According to Cohen, there was a special Integrated Operations Branch on the Air Force staff for joint operations at the time.

[486] Gissin, p. 331, Cordesman & Wagner, p. 20 and Bar-Siman-Tov (1980), p. 98 – 99.

[487] Bar-Siman-Tov (1980), p. 118 – 119 and 121.
The idea of strategic bombing was originally General Weizman's. Already in September 1969, he proposed to extend the use of the IAF. The main reason behind his thinking was the poor results of the limited use of the Israeli Air Force. Until September the results of the tactical bombing were rather poor.
Egyptian War Minister Muhammad Fawzi and the Chief Editor of the *Al Ahram* newspaper, Mohammed Heikal, named, according to Bar-Siman-Tov, the new Israeli strategy "psychological strategy" or "psychological warfare" because, according to the Egyptians, the real effect of the raids was meant to be not military but psychological; i.e., to arouse fears and implant a lack of faith in the capacity of the armed forces, and sow distrust and dissension between the political leadership and the public (see ibid, p. 135).

the massive air raids, Egyptian artillery continued shelling and causing losses to IDF troops in the Canal line.[488]

The setting up of *Sa-3* missile sites manned by Soviet personnel near Egypt's cities, which began in the second half of March, led to a change in targets. Army camps were given second priority and instead missile sites near the large cities and radar installations in the Nile Delta took first priority. Despite that, at the end of June 1970 a massive air defence net – including *Sa-2* and *Sa-3* missiles and a large quantity of different antiaircraft guns – was installed with Soviet help. From the very beginning, it was able to cause losses to the IAF.[489]

Bar-Siman-Tov estimates that the Soviet success in blocking the IDF in-depth raids and in achieving a strategic balance on the canal front created, in fact, the conditions for ending the war. One can agree with this statement. Despite the fact that both *Sa-2* and *Sa-3* missiles were familiar to the Americans from the Vietnam War and in the final phase of the War of Attrition the United States provided the Israelis with help in the form of advanced electronic warfare gear to counter the new threat, the Israelis agreed to a cease-fire. Thus, it was more the fear of direct confrontation with the Soviets that forced the Israelis into peace negotiations. However, according to Ariel Sharon, a plan for crossing the Canal near Qantara, eliminating the Egyptian air-defence network in that region and withdrawing was drawn up in the IDF General Staff. This plan was never carried out. The risks became too high, obviously for the reasons that are explained above.[490]

According to Cordesman and Wagner, Israel never fully came to grips with the problem of suppressing the *Sa-3*s during the War of Attrition. It also never realised the potential implications of the improvement in Arab ground-based air defence. The report of the Agranat Committee, which was established to examine the Yom Kippur War, also proves this. According to the report, before the Yom Kippur War it was estimated that enemy air defences were in third place among the obstacles to IAF operations, number one was weather and number two deficiencies in equipment. This was a fatal error that was already revealed in the first hours of the next war, the Yom Kippur War in October 1973. Therefore, it can be said, as Murray Rubinstein and Richard Goldman have done, that the Israeli Air Force had a foretaste of the changes that guided missiles were bringing to warfare, but they remained largely blind to the tactical implications of this new technology.[491]

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[488] Cohen, p. 294 – 295, Bar-Siman-Tov (1980), p. 132 and Rubinstein & Goldman, p. 106 – 107.

The first *Phantom*s came to Israel in September 1969.

[489] Bar-Siman-Tov (1980), p. 142 – 143 and 172.

[490] Bar-Siman-Tov (1980), p. 172, Sharon, p. 234 – 235 and Nordeen, p. 113.

[491] Cordesman & Wagner, p. 20, van Creveld (1998), p. 214, Investigating Committee of the Yom Kippur War; The Report, Jerusalem 1975, part 3.4, IDF and Defense Establishment Archive, Tel Aviv, p. 1356 - 1357 and Rubinstein & Goldman, p. 110.

The report of the Investigating Committee of the Yom Kippur War, also known as the Agranat Committee, was published in full in January 1995.

10.1.3. Counter-guerrilla activities; reflections of combined arms and joint operations

Although peace-time low intensity operations are outside the scope of this study, a short look at the counter-guerrilla operations between 1967 and 1973 is in order because they influenced the principles of the conventional warfare as well. Counter-guerrilla operations can be divided into two categories, both in time and space and in type of action. After the Six Day War, guerrilla activities against Israeli targets – mainly civilian – grew steadily, reaching their peak in the years of the War of Attrition. Thanks to effective counter-operations, the Israelis were able to stop the Palestinian armed resistance in the West Bank at the end of 1970 and in the Gaza Strip at the end of 1971. As a result of this, in 1972 – 1973 Palestinian activities spread outside Israel's borders. Typical events during this period were hijacks and strikes against Israeli citizens abroad, the most prominent of them being the massacre of Israeli athletes at the Münich Olympic Games in 1972.[492]

After the Six Day War, Israel invested a lot of time and effort in developing a counter-terror and anti-guerrilla strategy. This strategy was heavily offensive and purely military at all levels. At first the IDF responded to terrorist actions when and where they took place but rather soon it became obvious that the initiative could not be left to the PLO. This led to preventive operations. In the Gaza Strip, the Israeli counter-actions can be described as having been piecemeal search and arrest operations, which looked more like police procedures than army operations although, in addition to special forces, IDF troops were also used in these missions. However interesting, these operations are outside the scope of this study and are therefore not studied in greater detail.[493]

Instead, counter-guerrilla operations on the West Bank and some operations outside Israel's borders also represent warfare at the operational level. At first the counter-guerrilla actions were started with the reconnaissance forces of the territorial commands, the *Sayerets*. Their missions varied from pursuits and ambushes to the mining of roads used by the terrorists and interdicting guerrilla activities in the cities of the West Bank. However, the

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The Agranat Committee, led by the Chairman of Israel's Supreme Court Shimon Agranat, consisted of both civilian and military members. Its mission was to evaluate the process that led to the Yom Kippur War, the IDF's performance during the war itself and to provide suggestions for further measures.

[492] O'Neill, p. 237 – 241, Ben-Rafael, Eliezer: A Guerrilla Conflict in International Politics, Greenwood Press 1987, Appendix 1 and Katz (1989), p. 106 – 107, 109 – 110 and 112 – 113.

The Jordanian civil war in 1970; i.e., the action of the Jordanian army, the Arab Legion, against the Palestinians in Jordan, also had a significant influence on the cessation of Palestinian activities in the West Bank.

[493] Tophoven, Rolf: Fedayin – Guerrilla ohne Grenzen, Bernard & Graefe Verlag fuer Wehrwesen, Frankfurt am Main 1974, p. 66, Feldt, Mikael: Israelin sotilaalliset vastatoimet Intifadan kukistamiseksi Länsirannalla ja Gazassa, (Israel's Military Counter Measures to Thwart the Intifada in the West Bank and the Gaza Strip), a study from the General Staff Officer Course, National Defence College Finland, Gummerus Kirjapaino Oy, Saarijärvi 1997, p. 38 – 39 and Handel, p. 564.

scale of the Palestinian raids and the limited manpower of the *Sayeret*s forced the Israelis to change their course of action. The use of heavily armed jeeps and helicopters was not enough to stop the strikes. Therefore, the Israelis revitalised the S.N.S. principles of pre-emptive attacks against the enemy's home bases.[494]

The first large operation of the IDF across the Jordan border was "Operation *Tofet*" against the Palestinian training base in the town of Karameh in the Jordan Valley in March 1968. The brigade scale task force consisted of paratroopers, tank and mechanised units, reconnaissance and engineer units, Air Force elements including a helicopter unit and some additional troops. The objective of this force was to destroy the camp and show the Arab Legion that the Israelis were also able to operate on Jordanian soil, if necessary. The operation was not a great success. According to Luttwak and Horowitz, IDF troops had only trained in small detachments after the Six Day War, not in large formations for mobile war. This caused the loss of flexibility. In addition, fog in the landing area delayed the use of the heliborne force that was to block the withdrawal roads of the guerrillas, which enabled most of the guerrilla fighters to slip away. Besides, the quick reaction of the Arab Legion was obviously a surprise to the Israelis.[495]

According to Samuel Katz, Karameh was a victory to the Arabs because the Palestinians had fought the IDF on equal terms for the first time, and inflicted impressive casualties on the Israelis. Katz also states that quick, one-time operations that make use of massive force cannot succeed in stamping out terrorist threats because it means the loss of flexibility and speed. However, despite this statement, the Israelis didn't abandon large-scale anti-guerrilla operations. From 1969 to 1970, seventeen raids, in which paratroopers, infantry like the *Golani* Brigade and armour like the *Barak* Brigade were used, were conducted against Palestinian bases. After Karameh, the IDF also spent more time on training in garrisons and camps left behind by the Arab Legion in 1967. The reduction of the activities of Palestinian guerrillas in the West Bank during that time shows that the results were good. According to Katz, the success on the West Bank encouraged the General Staff to extend the scale of the commando raids in the Suez Canal area as well.[496]

However, the experience at Karameh was, according to Cohen, a starting point for future airborne operations. This operation showed the need for additional helicopters to transfer troops to the battlefield quickly enough and led to the establishment of a helicopter wing in the IAF. On the eve of the Yom Kippur War, the IAF had four helicopter squadrons; a training squadron of

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[494] Katz (1989), p. 83, 91 and 99 and Cohen, p. 255 - 256.

Sayeret Haruv (Central Command) was trained to use helicopters in tracking and pursuits while *Sayeret Egoz* (Northern Command) specialised in using jeeps. *Sayeret Shaked* in the Southern Command concentrated on tracking Egyptian commandos in depth in the Sinai.

[495] Katz (1989), p. 93 – 95, Katz (1996), p. 121, Cohen, p. 259 – 262 and Luttwak & Horowitz, p. 334 – 335.

Cohen calls "Operation *Tofet*" by the name "*Inferno*".

[496] Katz (1989), p. 84 and 95 and 100 – 102, Katz (1996), p. 97 and 121 and Luttwak & Horowitz, p. 334 – 335.

older equipment, and three operational squadrons. This meant a heli-lift capacity of at least two battalions in one flight.[497]

Counter-terrorist and rescue operations in Israel and abroad were joint operations in most cases. A preventive operation called "*Bardas 54 – 55*" in January – February 1973 against Palestinian bases in Tripoli in Libya is one of the most famous. It was the first large-scale IDF raid in which each of the three services were represented under one unified command, although this was a year before the terms combined arms and joint were adopted by the IDF.[498] All commands also contributed equally to the logistics, planning and execution of the raid, which was preceded by a brigade-size exercise of paratroopers at a site near Jericho and amphibious assault training near Haifa. In many other operations – depending on the time spent on training – models of objectives were also constructed, and assault procedures were done to split-second timing. Sub-commanders joined the planning to familiarise themselves with the details of the operation while the commanders' role was still central; they were trained to act according to the situation. On the whole, the change in leadership principles or in tactics was minimal when compared to Ariel Sharon's tactics before the 1956 War or even to Orde Wingate's tactics before Israel's independence. This time only the scale of the operations were extended to the combined arms or joint services level.[499]

The large-scale raids were good training for combined operations. However, they represented more exceptions than the rule in the IDF during the period between 1967 and 1973. The dominance of tanks and the Air Force was the tendency before the Yom Kippur War. Nevertheless, the experience that the IDF got in multi-branch and multi-service operations was to be of special value during the difficult phases of the Yom Kippur War.

10.2. The adoption of defensive defence

The cessation of hostilities after the War of Attrition was seen in two ways in Israel. Politicians showed confidence in the correctness of the path taken during the war while soldiers mostly disagreed with this opinion. Major General Matityahu Peled evaluated the strategic situation in Israel in the newspaper *Ma'ariv* on 19 September 1970. According to Peled, "overconfidence in Israel's military strength and underestimation of the opponent took place in the shape of the absence of a military option for the enemy." In other words, after the War of Attrition Israel had no realistic scenario for an all-out war. Israel continued to rely on the territorial and military status quo and distrusted any political

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[497] Cohen, p. 259 and 262 and The Military Balance 1976 – 1977, The International Institute for Strategic Studies, London September 1973, p. 33.

According to the Military Balance, the IAF had 12 *Super Frelon* and 12 *CH-53* transport helicopters, 20 *Bell*s (*AB-205 A*), 25 *Iroquee*s (*UH 1-D*) and 5 *Alouette*s on the eve of the Yom Kippur War.

[498] Actually, ground forces command did not yet exist at that time. Nevertheless, ground, air and naval troops were included in this operation.

[499] Katz (1989), p. 109 – 110 and 112 – 113.

initiatives that would have been liable to change this. Secondly, by relying on the static defence system, Israeli framers of security policy ignored the tactical and operational experiences of the War of Attrition. Troops were – excluding tactical commando forces that were sent to the Egyptian side of the Canal – tied to fixed fortifications. As a matter of fact, the operational doctrine was not in use during the War of Attrition at all. Besides, the tactical proximity of the Bar Lev Line to the Egyptian lines had made it possible for Egypt to force Israel to fight the War of Attrition. In addition, from the operational point of view, the transfer of the Egyptian missiles to the vicinity of the Canal meant a degree of neutralisation of Israel's air superiority in the Canal sector. This extremely essential influence on the IDF's operational doctrine was not understood despite the fact that this isolated tanks and the airforce, the primary components of the IDF, from each other.[500]

The belief that a security doctrine based on a static defence system had proved itself during the War of Attrition prevented, according to Bar-Siman-Tov, any thorough examination of what had in fact resulted from basing security on static defence lines. Instead according to Louis Williams, the Bar Lev Line strengthened a basic misconception in the public mind that the line of strongholds was a massive *Maginot*-type construction, intended to prevent any crossing of the Suez Canal. However, the debate concerning the Bar Lev Line was reopened in the IDF between advocates of mobile defence and adherents of static defence. General Sharon, who shed light on this question in his autobiography, initiated the discussions. According to Sharon, a line of fortifications could not play an effective role in preventing a crossing of the Canal. The Israelis would only make themselves fixed targets where positions and movements would be under constant surveillance and therefore Israeli procedures would become common knowledge. Secondly according to Sharon, the Bar Lev Line had deprived the army of its greatest asset, mobility. This was against the principle of flexible thinking, which was a prerequisite for taking the initiative. Even worse, manning the strong points would commit the Israelis to a static defence on an outer line, where there was no possibility of winning a battle. This was against the operational doctrine in use at the time.[501]

According to these arguments, the opponents of the Bar Lev Line suggested that the Israelis should base their defence on the natural line of hills and dunes from Belusa in the north to Tasa in the south. This line runs parallel to the Canal five to eight miles to the east and dominates the Canal plain. Mobile, mainly armoured forces, would operate in the space between the Canal and the barrier line in the rear in order to wipe out invading Egyptian forces. A second line with mobile reserves would be established 15 to 20 miles from the

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[500] Bar-Siman-Tov (1980), p. 191 and 198 – 200.

Original Peled, Matti: Thoughts On Defense, Ma'ariv, September 19, 1970.
According to Bar-Siman-Tov, Egypt's strategy of attrition failed from the purely military point of view, but politically it succeeded. By managing to get direct Soviet military intervention in the war when militarily driven to the wall, Egypt succeeded in improving its strategic balance vis-a-vis Israel, and this improved her political stance.

[501] Sharon, p. 220, Schiff (October Earthquake), p. 139 – 140, Williams (1989), p. 200 and Rothenberg, p. 209.

Canal, where the mountains, including the Mitla and Gidi passes, begin. Infantry would not be posted along the line of the Canal, it was to only be in the barrier line to the rear. On the whole, it was expected that with this concept the Israelis could afford an Egyptian crossing as well as a penetration of a mile or two inside the Sinai before concentrating on Egyptian weak points in mobile warfare.[502]

The adherents also agreed that the Bar Lev Line could not serve as a shield for the Sinai and regarded the strong posts merely as look-outs, each containing a platoon of infantry with a detachment of tanks, two or three at the most, with mobile forces patrolling between the positions. They also realised that the entire length of the Canal could not be held but insisted, however, that the positions be more than a chain of observation posts. The strong points would be given more fighting capability by constructing new access roads for armoured reserves to firing ramps along the high bank of the Canal, and a switch road, some miles back from the Canal, to allow artillery to move rapidly. Altogether, these installations were supposed to deny crossing points at major road junctions for a few hours and enable reserves to move up.[503]

The new concept was a compromise, though no substantial changes were made in the static defence concept. According to Bar-Siman-Tov, the reasons were the enormous investments that had already been spent in building the Bar Lev Line, the powerful inertia of routine and an inadequate will to change things. During Major General Sharon's tenure as the OC Southern Command (December 1969 – July 1973), the Bar Lev Line was completed. On the eve of the Yom Kippur War the line consisted of three elements: In the first line of defence along the Canal line were 31 stone- and sand-reinforced bunkers, *maozim*s, connected to earthen ramps that were designed to provide cover for tanks, which would reinforce the *maozim*s. Second, some 10 kilometres back in the Sinai 20 strongholds of company strength were built in a hill line, *taozim*s. Third, a road network including two north – south roads and a series of east – west roads were constructed to make counter-attacks possible. All these changes show at least a slight deviation in the original plan to a more offensive application, which can be seen as being a consequence of Sharon's influence. He based the preparations on the scenario that in future the battles would be fought in depth in the Sinai. In this concept mobile operations would be Israel's best defence. The road network was a prerequisite to this type of warfare, longitudinal and transverse roads would give the armoured forces the ability to launch a counter-attack swiftly up and down the length of the front and to the Canal at any point. While in General Adan's concept the *maozim*s were constructed to be antennae that were supposed to serve as observation posts and to start initial engagements after the use of reserves in depth, in Sharon's plan the strong points only had the role of observation. Therefore,

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[502] Sharon, p. 220, Schiff (October Earthquake), p. 138, and Herzog (1975), p. 11 – 12.

[503] Adan, p. 49 – 52, Schiff (October Earthquake), p. 139 – 140 and Rothenberg, p. 170 – 171.

they would be evacuated in the case of an all-out war. According to this concept Sharon also reduced the number of *maozims* to 18.[504]

According to Zvi Lanir, the Bar Lev Line was an unsuccessful compromise between the static and mobile possibilities inherent in the situation. Despite the fact that considerable room for operational manoeuvre had been created in the Six Day War on all fronts, the political concept of secure borders put the IDF in a rigid defence and did not bring about a change in the doctrine. Zvi Lanir calls this strategy by the name of "defensive defence".[505] The defence concept that was adopted can best be seen in the role of the Bar Lev Line. The weakened strongholds along the Canal line represented the concept at both the strategic and tactical levels; static defence. Operational level tank formations able to engage in mobile warfare in depth in the Sinai were almost separate from the strong points and mentally also separate from the concept of static defence despite the fact that the Bar Lev Line was not initially intended only for defensive purposes, but also as a jumping-off point for the west bank. However, the final result of the rebuilding and reorganising of the Bar Lev Line was that there were sectors without a stronghold. Therefore according to Schiff, some officers argued that it was possible that daylight would reveal that the Egyptians had transferred an infantry brigade to the east bank. General Dan Laner described the situation quite aptly as follows:" We have, rather than a line, depth. It is important to stress that this system must be managed in a mobile and aggressive fashion." Nevertheless, the line was the fact and became widely accepted as such before the Yom Kippur War, but it also can be supposed that it gave a false sense of security – especially after the reduction of forces. In any case, in an interview ten years after the Six Day War, Yitzhak Rabin declared, according to Rothenberg, that "there was not a single person in the defence establishment who suggested that we retreat from Suez."[506]

On the Golan Heights, the Israelis used the period between 1967 and 1973 to make their positions as impenetrable as possible by constructing a series of obstacles and fortifications throughout the area, but especially along the eastern edge of the plateau. This line of fortifications was situated on the demarcation line, the Purple Line, between the Israelis and the Syrians. The preparations consisted of a four to six meter wide and four meter deep antitank ditch, an embankment on the Israeli side of the ditch including a series of observation posts, 17 concrete forts (*mutzavim*) of 10 to 30 men and a minefield along the border line. During the years 1972 – 1973 new roads were

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[504] Bar-Siman-Tov (1989), p. 199 – 200, Thornberry, p. 26, van Creveld (1998), p. 212, Sharon, p. 238, 265 and 270 and interview of Major General (ret.) Avraham Adan.
See also Schiff (October Earthquake), p. 143 – 144.
According to Schiff, there were 16 manned, though very small, strongholds left when Sharon left the Southern Command.

[505] Lanir, p. 29.

[506] Schiff (October Earthquake), p. 142 and 144 and Rothenberg, p. 171.

also built in order to facilitate the movement of tanks and the deployment of artillery.[507]

In addition to constructing fortifications on the most hostile fronts, home defence was also strengthened by establishing new settlements in the Gaza Strip, on the Jordanian front and also on the Golan Heights. The NAHAL organisation provided cores for the new settlements which, according to van Creveld, meant that the settlements were primarily parts of the overall defence system and only secondarily the expansion of civilian settlements. Only in the vast expanses of the Sinai Peninsula was there no need to use settlements in the role of home defence.[508]

10.2.1. Operational analysis

According to van Creveld, during Lieutenant General Haim Bar Lev's four-year term in the post of Chief of Staff (1968 – 1972), the transformation of the IDF – from an army with an almost exclusively offensive orientation to one that, initially at least, expected to defend and hold out – was completed. This statement is valid only at the strategic level of warfare where Israeli strategists worried about how to absorb a first blow. In January 1972, Bar Lev was succeeded by Lieutenant General David Elazar, while Major General Israel Tal was appointed Deputy Chief of Staff. According to Zeev Schiff, it was then expected that Tal and Sharon, the OC of the Southern Command, would succeed in introducing a mobile defence system, but they made no substantial changes. Despite the tactical defence of the Canal line, at the operational level the tendency towards the offence remained in existence.[509]

However, the principles of mobile defence were not unknown to the Israelis at the time. General Adan, who had studied at the U.S. Armoured School in Fort Knox in 1958, had written a field manual entitled *Armoured Operations* after his return, where mobile defence was also included. Before the Six Day War, these principles were not valid but after the territorial conquest of the 1967 War the situation changed. Nevertheless, rather than developing an appropriate doctrine based on mobile defence the use of mobile forces were connected to the static defence of the Bar Lev Line and on the Golan Heights to the fortifications of the Purple Line. According to this, mobile defence meant strong points in the front line, armour in reserve manoeuvring in the planned killing ground – also in the ramparts along the Canal line – and the main reserves behind these to be also used in depth in planned killing grounds of their own. This was in fact the concept that was meant to be used on the Golan Heights and in the Sinai before the reduction of the number of *maozim*s and the strength of the infantry.[510]

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[507] Cordesman & Wagner, p. 43 – 44, Herzog (1975), p. 59 and Katz (1989), p. 117.

[508] Van Creveld (1998), p. 201.

[509] Van Creveld (1998), p. 208, Schiff (October Earthquake), p. 139 – 140 and Rothenberg, p. 171.

[510] Interview of Major General (ret.) Avraham Adan and Handel, p. 539 – 540.

According to the Agranat Committee report, before the Yom Kippur War defence and offence at the principal level were in balance. Nevertheless, during the years before the war, defensive principles had been left in the background. The report also shows that the principles of mobile defence were included in the operational doctrine, but on the whole the manuals concentrated almost only on offence.[511]

According to Major General Yitzhak Hofi, OC of the Northern Command during the Yom Kippur War, the principles of active defence were included in the operational doctrine. This might have been the case on the Golan Heights but elsewhere it was obviously not the case. General Adan stressed that the principle of active defence was born only during the Yom Kippur War when mobile defence proved to be inadequate to cope with the mass of enemies. According to Adan, the difference from mobile defence was that active defence consisted of two elements: a strong defensive part that would have a static mission and a mobile defence containing both defensive and offensive elements. Thus, active defence, which also was originally an American practice, was a mixture of strong defence and mobile defence but was more defensive than mobile defence where the success mostly rested on the counter-strikes of mobile reserves.[512]

The dominance of offence in the operational echelons can be explained from at least two viewpoints. First, the operational doctrine had not experienced any remarkable changes and second, the organisation of the IDF, armoured formations backed by the Air Force, was an army especially suitable for offence. The doctrine was still heavily offensive, though the principle of pre-emption was not so valid anymore. Neither the Bar Lev Line nor fortifications in the Purple Line had reduced the offensive spirit. Despite this seemingly defensive strategy, the IDF still prepared for an offence at the operational level. According to Adan, it was generally thought in military circles that it was unnecessary to start a war because of the cover the Sinai offered. Therefore, the IDF was seen as being able to destroy the Egyptians if they tried to cross the Canal. It was not even expected that the Syrians would dare to launch an attack. Nevertheless, mobile defence was not seen as an ideal solution in the circumstances that prevailed after the War of Attrition, because it was thought that the Egyptians would try to cross the Canal, stabilise their defences and after that continue to push forward on a wide front. Both Adan and Gissin state that there also were disputes on how to cope with this problem. A crossing operation was chosen. This illustrates the unchanged doctrine quite well. The Israelis not only prepared to absorb the Egyptian crossing, but also to launch a counter-offensive across the Suez Canal into Egypt.[513]

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[511] Investigating Committee of the Yom Kippur War; The Report, p. 1350 – 1351.
The committee counted that there were 28 examples of offence in the manuals at the divisional level, but only one concerning defence.

[512] Ibid. and interview of Major General (ret.) Avraham Adan.

[513] Ibid.
See also Gissin, p. 144 – 145.
In this context Gissin mentions that "there is perhaps more than a grain of truth to the cliché that some military organisations are better at the offence than the defence, and vice versa."

According to Gissin, the mixture of static defence on the Canal line and the offensive spirit of the operational echelons in the Sinai emanated from problems in command and control principles. The Bar Lev Line alone demonstrated, according to him, the operational as well as psychological problems in the chain of command when the IDF tried to integrate the defensive and offensive orientations into its training and its command and control doctrine.[514] In a way this was natural; in a defensive posture the sub-commanders had – at least in theory – less room for flexible thinking or taking the initiative. Depending on the training, this might have been in contradiction with the principles of "Optional Control". Besides, in the early 1970s there was an ongoing change of generations in the IDF; highly offensive-spirited veterans of the past Israeli wars were just leaving the service and their successors were in between defensive and offensive thinking while the troops were still mainly trained for offence.

Despite these defensive trends, at the operational and tactical levels the defence philosophy was based on mobile armoured formations. This was the case both in active and reserve formations. According to Adan, the Training Department of the General Staff, with its Soviet-origin Jews, examined Soviet doctrines, which were more or less in use in the Egyptian and Syrian armies, organised aerial intelligence in the Suez Canal area and in eastern Golan, and according to these developed a model on how to break such defence lines with armour. On the Sinai front, during the War of Attrition, General Adan instituted specialist teams to examine the lessons to be drawn from every action of the war. However, in the meantime, he resisted pressures to increase the number of armoured brigades involved in the mobile defence system. According to Louis Williams, his argument was that however useful the training might have been, committing larger forces would have resulted in wear and tear on engines, which had to be in first rate condition for the eventuality of a full-scale war. Therefore, the active armoured Sinai *Ugdah* was building logistic back up and infrastructure for absorbing reinforcements in the event of war while the Sinai Armoured Headquarters was preparing its contingency plans. In addition, a brigade commanders' forum, instituted by the Chief of Staff, Lieutenant General Elazar, exchanged views and new tactical concepts. That preparedness also included the learning of new techniques – among others, the crossing and bridging of water obstacles, which was trained for in 1972 on the Kishon River near Haifa and at Ruafa Dam in the first large-scale exercises since the War of Attrition.[515]

After considerable study and experimentation, there was agreement that the Armoured Corps had to reorient itself towards massive daylight assaults on a brigade or even divisional scale, exploiting psychological shock, maximum mobility and disrupting the enemy's defences simultaneously at many

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In any case, on the Golan Heights offence was obviously still a consequence of the situation. The threat against Israel proper was too near for defence against quantitative superiority. In the Sinai, the statement sounds apt because there was also room for mobile defence in depth in the Sinai.

[514] Gissin, p. 144 – 145.

[515] Interview of Major General Avraham Adan, Williams (1989), p. 186 and 199 – 200, Sharon, p. 237 and Rothenberg, p. 123.

points.[516] Nevertheless, none of these aims were new in armoured warfare, nor also in Israel, although Rothenberg describes this as new tactics. Similarities to the German *Blitzkrieg* doctrine or to the Israeli application in the Six Day War were clear. Continuous operations up to three days at a stretch were not new; this principle was already adopted in the "Conveyor-belt" system in the early 1960s. The difference was the organisation that was built to implement these tasks. General Tal, who was commander of the Armoured Corps in the late 1960s, preferred tanks able to advance against enemy fire. This not only led to the purchase of *Centurion* tanks, which were slower but more heavily armoured than previous IDF tanks, but also to the dominance of tanks in organisations at the expense of lighter and more mobile vehicles. This fact is also revealed in General Elazar's words at the time: "If a terrorist slips in through the Jordan Valley, the population at large is not in danger. If we're short one tank company, the whole country's in trouble!"[517] At the tactical level and partly at the operational level as well this also meant a change from the indirect approach of mechanised forces to a more Fullerian-style direct assault of tanks and the Air Force. Nevertheless, both of these organisations show an offensive-orientation, the latter maybe even more so.

The apparent trend towards an "all-tank" fighting doctrine was not universally accepted in the IDF and in 1971 – 1972 there was a heated debate in the IDF in which critics, citing the 1967 experiences, argued the need for integrated combined-arms teams. Yigal Allon put these demands in words in his book *The Making of Israel's Army*. On the whole, Allon preferred defensive deployment in depth. However, he also saw the need for a new generation of tanks for counter-offensives. By rebuilding the armoured formations, the mechanisation of the infantry had to be completed, the power of the mobile artillery had to be increased and all the services had to be adapted for the fighting methods of the 1970s as well. This was the opinion of General Adan as well. He preferred fully mechanised armoured formations, where the infantry was also equipped with fighting vehicles that were able to follow and fight with the tanks dismounting only if needed. Instead, in General Tal's concept the mission of APCs was to transfer infantry to certain areas to make the continuous movement of tanks possible.[518]

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[516] Rothenberg, p. 123, Katz (1996), p. 129 and interview of Major General (ret.) Avraham Adan.

For example according to Katz, the 7th Armoured Brigade spent the latter part of 1972 and 1973 up to the Yom Kippur War in offensive exercises.

[517] Kahalani (1994), p. 214.

[518] Rothenberg, p. 160, Allon (1970), p. 106 – 107 and Adan, p. 209.

Allon also saw a need to improve the methods of paratroopers in long-range missions, though obviously this meant low intensity conflict missions. In Allon's concept, the Air Force would basically remain a tactical force and special attention would be given to anti-aircraft defence. The Navy's main task remained as it had been; to prevent the landing of enemy forces on Israel's beaches, though the Navy also had to develop its capacity to attack sensitive objectives on enemy shores, including a marine force mainly for deceptive sub-missions. It is interesting to note that Allon's vision was mostly implemented after the Yom Kippur War.

According to Sharon, between 1967 and 1973 the IDF was overcome by a kind of "tank mania". Other combat arms; i.e., infantry, armoured infantry and artillery, were neglected and standard battle doctrines or principles of war like ratios of force and concentration of effort were taken less seriously. This was mainly based on the idea that infantry, mechanised or not, would find it increasingly difficult to survive and fight on the battlefield, and on the IAF's effectiveness as "flying artillery". Finally, the school of mechanisation was displaced in the early 1970s despite the experiences of Israel's previous campaigns. During the 1956 War in the Sinai, armour had relied heavily on manoeuvre, had made only a few daylight assaults and engaged other tanks only on a few occasions. In the Six Day War, there were still manoeuvres as well as direct attacks. In this war tanks and the Air Force played a leading role in the success, which was a reason why the tanks were trusted. "Things had gone nicely without too much infantry", as Adan noted; a fact that finally led to the reduction of the supporting branches. However, this tendency didn't consider the fact that the Israeli success in the Six Day War was partly due to the lack and inefficacy of the Arab antitank and antiaircraft defences. The other main reason for the development was money; if the defence allocation had to be concentrated on one or several branches or services, they would be the Armoured Corps and the Air Force as both had proved their efficiency in the last war.[519]

10.2.2. Changes in organisations

As a result of the lessons of the Six Day War, the *Ugdah* became a permanent force structure, replacing the brigade as the primary force. An army corps was also suggested by General Tal in autumn 1969. According to the Agranat Committee report, this idea was based on the experiences of the Six Day War where territorial commands had not been particularly successful in both mobilising troops and leading them on the battlefield. However, this proposal was not put into practice before the Yom Kippur War. Instead, permanent divisions came into being. According to Gideon Avidor, there were several reasons for this decision. First was the need to concentrate power in the name of economy of force. Studies of the Six Day War revealed that brigades had seldom operated alone on the battlefield. This was a real change when compared to the use of brigades during the 1956 War when many of the brigades had independent missions. The regular Sinai Division, which was established during General Adan's tenure as commander of the Armoured Corps, was the first real armoured division in the IDF and served as a model

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General Tal's concept for using APCs was similar to the American, British and French practice at the time. Unarmed APCs were only for transferring infantry from one place to another.

[519] Rothenberg, p. 121 and 160, Cordesman & Wagner, p. 54 – 55, Sharon, p. 304 and interview of Major General Avraham Adan.

Despite his statement, Adan clearly understood the deficiencies of the lack of infantry.
See also van Creveld (1998), p. 206.
Before the Yom Kippur War, the Air Force and Armoured Corps were being allocated more than 80 percent of all available resources.

for the reserve armoured *Ugdah*s. According to Avidor, the latter was a consequence of the thought that in quiet periods the organisation must be identical to that of the battlefield. This was the only way to live with and learn the frameworks and techniques of battle before the first shot was fired. In 1973, the IDF had seven armoured *Ugdah*s, which consisted of two to three armoured brigades and some organic artillery. In addition, several independent tank battalions were created to support the few infantry brigades.[520]

The decision to create divisions as a primary force also caused changes in the brigades. It was believed that the "teeth" forces must be relieved of every burden and responsibility that was not directly connected to the execution of the mission. This view led to streamlined brigades of two tank battalions where several maintenance duties as well as artillery were concentrated at the divisional level. In addition, according to Luttwak and Horowitz, the tank battalions were stripped of some of their organic mechanised infantry and mortars as well. In this way armoured battalions became almost pure all-tank formations, which decreased the status of the brigades to a level that can be compared to regiments. The reorganisation might well have lightened the command chain of the brigades, but it certainly also meant the loss of independence and flexibility. Without supporting elements, the brigades were no longer capable of engaging in missions that lasted several days without the support of higher echelons. Nevertheless, according to Avidor, flexibility was created by the quality of the lower echelons, which would give the higher echelon freedom of action. With training, both officers and men in the IDF could execute their orders quickly and precisely at all times. In any case, whatever the contents of the training might have been, it is highly suspicious that this manner of thinking – which more resembles order tactics – was ideal to preserve enough room for innovation in the brigades. In this way the concept was also against the principles of "Optional Control".[521]

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[520] Avidor, p. 66 – 68, Adan, p. 42 – 44, Rothenberg, p. 158, Luttwak & Horowitz, p. 363 and Investigating Committee of the Yom Kippur War; The Report, p. 1455.

According to Rothenberg, an armoured *Ugdah* consisted of three armoured brigades of two tank battalions each, a reconnaissance battalion, an artillery regiment of 36 self-propelled howitzers and small supporting elements. The tank strength was around 200. Correspondingly, according to Luttwak & Horowitz, an armoured division had two tank brigades and one mechanised brigade. It is obvious that the quality of the equipment determined the terms; a brigade consisting of older tanks and APCs was obviously preferably called a mechanised brigade rather than an armoured brigade, as had also been the case earlier when the IDF did not have enough equipment to equip all armoured formations with modern tanks.

See also Williams (1989), p. 195 and van Creveld (1998), p. 219.

According to Williams, a regular armoured *Ugdah* consisted of two armoured brigades at first. The third armoured brigade in the Sinai Division had its origins in the immediate needs of the War of Attrition.

Van Creveld states that the IDF was so "tankomanic" in the early 1970s that it also considered the possibility of setting up an armoured division without an organic artillery regiment at all.

[521] Ibid., p. 68 – 69 and 71, Katz (1996), p. 128 – 129, Luttwak & Horowitz, p. 363 and interview of Professor, Colonel (ret.) Yehuda Wallach.

According to Katz, the 7th Armoured Brigade consisted of two tank battalions, one mechanised battalion, a reconnaissance platoon and small supportive elements. However,

According to Rothenberg, the "all-tank" concept never became an official doctrine. Despite this fact, the reserve formations of the Armoured Corps remained mainly oriented towards reliance on tanks and had rather little organic mechanised infantry, according to Weller some 14 –16 APCs to 32 – 34 tanks; i.e., 1:2. In addition, the plan was not to mobilise the mechanised units at the same time as the tanks units, but after them. However, this was not seen as being a risk, although it meant that at first the tanks would have to cope on their own in the case of war. Another deficiency was that mechanised infantry preferred to use their APCs instead of fighting dismounted. This was a consequence of the status of the mechanised units in the Armoured Corps. Mechanised infantry was to be united with the tanks and follow them in deep penetrations. The result was that the training level of the mechanised infantry for fighting dismounted remained at a low level, while their survival in deep armoured penetrations was also underestimated. In addition, the training level of the real foot infantry was even lower and, according to Weller, these troops were also defensively oriented. Only the *Golani* Brigade, the paratroopers and several NAHAL units were trained for traditional infantry tasks like fighting dismounted against enemy antitank infantry and fighting in trenches, if not in co-operation with the tanks. In addition, the idea of using heliborne landings or airdrops to support armoured spearheads in conventional warfare was not an influential one, although the paratroopers had rather a lot of experience in minor heliborne operations from the War of Attrition and operations against Palestinian guerrillas.[522]

The situation of the fighting vehicles was also bad from the viewpoint of the quality of the APCs. The old *M-3* half-tracks were not armed to follow tanks nor

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this brigade was a regular brigade. The reserve brigades, which were more numerous, were probably also more streamlined, as Luttwak and Horowitz state.
See also van Creveld, p. 205 and interview of Major General (ret.) Avraham Adan.
According to van Creveld, by 1973 the 21 brigades that the IDF had had in 1967 increased to 26 to 30, of which several of the former mechanised infantry brigades had furthermore been converted to armour. This also supports Luttwak's and Horowitz's views.
According to Adan, in 1973 a brigade was clearly a tactical formation while a division had an independent ability to engage in two to three efforts, which in this case means battles.

[522] Rothenberg, p. 160, interview of Major General Avraham Adan, Investigating Committee of the Yom Kippur War; The Report, p. 1437, 1439 and 1456 and Weller, Jac: Foot Soldiers in the Desert, Infantry and the October War, Selected Readings on the Yom Kippur War, United States Army, Institute for Military Assistance, August 1975, p. 60 – 61 (original text in Army, August 1974).

According to the Agranat Committee report, traditional infantry units like the *Golani* Brigade, paratroopers and NAHAL were trained to use indirect approach, to fight in trenches and to fight in half-tracks as well. However, such training had a lower priority, although these items were also in the curriculum of the officer schools. On the whole, infantry – including mechanised infantry – did not have independent tasks; it was planned that infantry was only to support the tanks.
See also Rubinstein & Goldman, p. 115 – 116 and The Military Balance 1973 – 1974, p. 33 and The Military Balance 1976 – 1977, The International Institute for Strategic Studies, London September 1976, p. 35.
According to Rubinstein and Goldman, the Israelis got *Arava* transport aircraft in early 1970. This plane, which had STOL-capabilities (short take-off and landing), was able to carry 17 paratroopers. However, according to the Military Balance, Israel had the *Aravas* in operational service only in 1976, when they had 14 of them. Therefore, the role of *Aravas* in airborne operations before and during the Yom Kippur War was non-existent.

did they provide protection for their crews. According to van Creveld, only about one seventh of the APCs were the more modern *M-113*s (*Zeldas*). Likewise, artillery and mortar support, as well as antitank defence, were also neglected. Tanks were seen as being resilient enough on the battlefield to counter both the enemies' artillery and antitank defence. This led to an underestimation of the role of suppressing fire by artillery or mortars, although it was originally planned that artillery and infantry would cope with the enemy infantry equipped with antitank weapons. The battlefield equation in terms of numbers of guns and infantry units remained too weak to deal with the enemy masses. In addition, according to Rothenberg, by 1972 most of the IDF's antitank missiles had been placed in storage. Tanks were seen as being better for this purpose as well.[523]

The reliance on tanks didn't enable the fighting missions by the mechanised infantry that General Adan had planned. In addition, the fortifications in depth in the Sinai were empty because of a lack of infantry. Therefore, the principles of mobile defence did not fully come into being before the Yom Kippur War. It was more "tank-defence", as General Adan called it; tanks moving from one place to another. On the whole, the result of the changes in the organisations was that on the eve of the Yom Kippur War the IDF was an army that relied heavily on superb tank forces and on the Air Force as "flying artillery" instead of preserving a proper balance between branches and services.[524]

10.2.3. The Air Force, a hodgepodge of technical needs, time limits and the realities of allocation

The Air Force and Navy also underwent changes after the War of Attrition, though more in organisations and in equipment than in operational doctrine. According to Cordesman and Wagner, Israel's overconfidence in its air power continued and before the Yom Kippur War the IAF acted as if it would still have freedom of action in the air. Nevertheless, it was not a question of any Douhetism that stressed the superiority of the air force in a war. According to Rothenberg, only a handful of Israeli air officers asserted that air power by itself could win wars, though nearly everyone believed in the decisive potential

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[523] Interview of Major General Avraham Adan, van Creveld (1998), p. 207 and Brower, Kenneth S: Armor in the October War, Selected Readings on the Yom Kippur War, United States Army, Institute for Military Assistance, August 1975, p. 36.

For example, General Adan, and he was not alone in his views, had demanded new APCs for the Armoured Corps before the war, but he was overruled by his superiors on the General Staff and in the Ministry of Defence so that armoured formations were left without modern mechanised infantry during the organisational developments before the war.
Brower states that the Egyptians were utterly dependent on their anti-tank guns and tanks for protection against tanks in the Six Day War. However, the Egyptian 85 mm and 100 mm anti-tank guns could not penetrate the armour of the Israeli *Centurion*s and *M-48*s and in tank-to-tank battles the Arabs were also clearly inferior, as was already discussed.
According to van Creveld, in 1973 the ratio of tanks to self-propelled guns was approximately 5:1 instead of 2-3:1 as it ought to have been if each armoured division had been provided with its full artillery complement.

[524] Interview of Major General Avraham Adan and Cordesman & Wagner, p. 21.

of the aircraft-tank combination. Besides, it was widely believed that the Egyptian Air Force would not be ready before 1975. Therefore, the IAF sought out neither more advanced air-to-ground weapons nor trained its crews for attack missions, including those on antiaircraft missile sites. In this context electronic counter-measures were also neglected. In addition, the IAF did not develop a joint staff to organise and co-ordinate the collection of reconnaissance data, and the planning and implementation of missions.[525]

Raanan Gissin estimates in his dissertation that the Israeli Air Force high command continued to base its operational plans on countering the Arab surface-to-air missile systems. It was expected that in the event of war the IAF was to be provided with the opportunity to launch a pre-emptive strike and/or would be given enough time to deal with the air defence missile threat before having to support the armoured formations. This concept was based on the experiences of the Six Day War and particularly on the experiences of the War of Attrition and the new equipment, especially on the new aircraft. During the so-called "electronic summer" in 1970, the IAF *Phantom*s and *Skyhawk*s, equipped with new electronic counter-measures gear and stand-off missiles - including the American-supplied *Shrike*s and *Maverick*s - had effectively dealt with the threat posed by *Sa-2* and *Sa-3* missiles. Therefore, it was believed on the General Staff and in the Ministry of Defence that the IAF would still be able to suppress the Arab air-defence systems with acceptable losses.[526]

Air Force personnel didn't share the optimism of headquarters. Aviem Sela, an Israeli fighter pilot at the time, later stated after the Yom Kippur War that the War of Attrition concluded with a feeling of discomfort in the Air Force. According to him, the IAF had no response to the huge, overlapping missile systems, which complemented each other. Besides, the new tracked *Sa-6* launchers were of special concern. On the eve of the Yom Kippur War, the *Sa-6* was almost unknown in the west. In addition, the Israelis had very little information on the almost equivalent preparations of the Syrians.[527]

According to Major General Weizman, the Egyptian surface-to-air missile systems could have been eliminated in 1970 during the War of Attrition. It would have required sending in ground forces in addition to the Air Force on the Egyptian side of the Suez Canal. The decision not do so was political and led to the resignation of Weizman, as already discussed. Because of the different views of the performance of the IAF in the General Staff and in the Air Force staff, the IAF chose, according to Cohen, the tactics of playing for time. The IAF had to be clearheaded to absorb the lessons learned under fire, and to cultivate better responses. According to Gissin, this required difficult compromises; mostly in favour of immediate short-term considerations

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[525] Cordesman & Wagner, p. 20 – 21, Williams (1989), p. 201 and Rothenberg, p. 162.

[526] Gissin, p. 366 – 367 and Rothenberg, p. 174.

[527] Cohen, p. 314.

Although the technical nature of the *Sa-6* was unknown to the Israelis, it was known that the Soviet Union had also delivered these missiles to both Egypt and Syria. Therefore, the existence of the *Sa-6* aroused respect within the IAF as can be seen in Aviem Sela's words as cited by Cohen: "We knew that *Sa-6*s could do everything but brew a cup of coffee and sing the national anthem."

because there was not the time required for a modernisation program. Therefore, the IAF prayed that this period would pass quietly. In the meantime, it would fill the gaps by purchasing the equipment available. This would include light unmanned aircraft for gathering information, passive measures like metal to confuse enemy radar and radar-homing air-to-surface missiles.[528]

During the process of technical modernisation, the IAF began to develop theories for combat against missiles. According to Cohen, the scenario was a joint surprise attack by Egyptian and Syrian forces, the former across the Suez Canal and the latter over the Golan Heights. Against this threat, the Israelis created a series of plans that was referred to as the "*Scratch File*". In this plan, the IAF focused on concentrated attacks on the missile systems. The aim was still to acquire at least partial air supremacy by destruction of the missile networks or by at least weakening them. In air battles, the IAF expected to still have an edge on their Arab counterparts. However, in January 1973 most of the commanders who had developed the "*Scratch File*" ended their active duty careers and were replaced by younger men, as was the case in the ground forces.[529]

Up to summer 1973, technical development had not progressed as planned and in August 1973 the Air Force commander, Major General Beniyamin Peled, updated the "*Scratch*" plans. In his opinion, the plan was too complex, and was, according to Cohen, overly dependent on elements that were not under Peled's control, like allocations for the purchase of sophisticated antimissile weaponry. Therefore, instead of progressing with the proper equipment, the IAF was forced to retreat into the conventional paradigms of tactical methodology. The IAF sought methods of tricking missile batteries by using the capabilities of its aircraft and its pilots' skills; i.e., altering attack altitudes and angles and reducing the time spent over the objectives.[530]

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[528] Gissin, p. 333, 336 – 337 and 366 – 367, Weizman, Ezer: On Eagles' Wings. The Personal Story of the Leading Commander of the Israeli Air Force, MacMillan Publishing Co. Inc., New York 1976, p. 281 and Cohen, p. 316 – 317.

According to Weizman, on the question on how to challenge the Egyptian missile network, "senior Israeli officers of different ranks displayed a marked deterioration in their ability to think, to assess foreseeable situations and to predict developments."

[529] Cohen, p. 317 – 318.

See also Gawrych (1996), p. 7.
According to Gawrych, Israeli pilots received approximately 200 flight hours per year with emphasis on initiative. This, without considering the contents of the training, was a lot when compared to the western scale, without speaking of the Egyptians, who got only 70 hours in a more centralised system. There is reason to suppose that the Syrians were more inferior than the Egyptians.

[530] Cohen, p. 317 – 318, 320 and 398.

According to Cohen, NATO members also followed the IAF's actions with curiosity; i.e., the questions of how to bomb missile batteries or to wage air battles in a screen of unknown sophisticated missiles.
See also Rubinstein & Murray, p. 122.
According to the authors, during the late phases of the War of Attrition the Israeli Ministry of Defence was so confident that the Air Force would solve the problem of the Egyptian missiles, that in 1970 it had rejected an American offer of remotely-piloted-vehicle (RPV)

The most significant organisational change in the Air Force after the War of Attrition was the transfer of the antiaircraft units from the artillery to the IAF. There were two choices: to establish an independent antiaircraft corps or join the IAF. According to Williams, in late 1969 the Head of Operations Branch, Major General Elazar, let the officers of the antiaircraft units – both guns and missiles – decide for themselves. The majority backed the decision to become part of the Air Force and by February 1971 the IAF inherited total responsibility for aerial defence.[531]

On the whole, the IAF's role in acquiring aerial supremacy via a pre-emptive air strike against enemy airfields was in the process of changing. Although pre-emption was still talked about, in practice its importance was decreasing. According to van Creveld, it was proposed that the IAF be employed to make the mobilisation and deployment of reserves possible at the outset of any future war, which meant using the IAF as "flying artillery". This was a deviation from the principle of assigning first priority to aerial supremacy.[532]

10.2.4. The modernisation of the Navy; the birth of the missile era

The Israeli Navy abandoned its previous posture of a Great Power navy in miniature in the years between the sinking of the destroyer *Eilat* in 1967 and the War of Attrition. The *Saar*-class missile boats became operational in 1969. This meant flexibility in fast-attack capabilities even outside Israel's home-waters. For the first time the Israeli Navy was properly equipped for its missions.[533] With a mobile force armed with the most modern sea-to-sea missiles and electronic counter-measure devices of the time, the Navy was able to develop innovative tactics that gave the Israelis the possibility of obtaining and maintaining the initiative at the sea. Therefore, it can be said that before the War of Attrition the Navy also got the doctrinal ability to transfer battle to enemy soil, or in naval terms to the enemy's home-waters.

Before the War of Attrition, the mission of Israel's Navy was to defend the coastal perimeters against enemy commando raids, hit-and-run bombardments and intelligence gathering. The division of forces was twofold; fast and lightly armed vessels protected the inner line near coasts while torpedo boats, destroyers and anti-submarine craft formed a screen further offshore in the Mediterranean and in the Red Sea in the Gulfs of Suez and Akaba. The forward defence was augmented by naval commandos who attacked enemy craft in their home ports. After the introduction of the missile boats during the War of Attrition, the extended operational ability enabled more offensive concepts. Therefore, the Navy adopted a deeper defensive strategy, which at the operational level took the form of offensive means; i.e., seeking

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weapons by saying that "we consider the small losses in aircraft we would take in dealing with the SAMs to be acceptable."

[531] Williams (1989), p. 116 and Cohen, p. 430.

[532] Van Creveld (1998), p. 203.

[533] Luttwak & Horowitz, p. 297 and Williams (1989), p. 266.

and engaging Arab – mostly Egyptian – units in their home waters and keeping hostile naval forces off balance.[534]

On the eve of the Yom Kippur War, the Navy was the only IDF service that was fully in accordance with the technical development of warfare at the time, including armament, electronic warfare equipment and simulated training in conditions equivalent to realistic battlefield conditions. After the Six Day War, the Navy had, according to Schiff, been very busy in examining itself. This had been a consequence of the sinking of the *Eilat,* but maybe it was still more a consequence of the Six Day War. Despite the fact that the Navy had succeeded relatively well in the war when its equipment is taken into account, it was not lulled into believing in its superiority. The Navy was becoming obsolescent and was therefore on the edge of modernisation. The sinking of the *Eilat* was only the culmination point in getting allocations for the development program.[535]

10.3. Towards the fifth round

Major General Tal, the deputy Chief of Staff during the Yom Kippur War, wrote in his article in *Israel's Defense Doctrine* that after the Six Day War Israel's defence concept changed. According to him, all "this was correct insofar as the question of our national existence was at stake, but it was wrong with regard to the possibility of Arab success in gaining limited military objectives." This clause can be interpreted in many ways, but the most obvious is that while the IDF was still capable of fulfilling its missions in an all-out war according to the operational doctrine, at the strategic level the defence concept was not clear at the time. Tal also repeatedly emphasised his opposition to strongholds that would impose strategic restrictions on the Israeli Supreme Command. This is revealed when he describes the imbalance between Israel's strategic, operational and tactical thinking as follows: "From the Six Day War to the Yom Kippur War assessments of the military situation, both long and short term, were no longer derived from defined national goals but from conjectures, wishes and hopes. Instead of military strategy being derived from national policy, operational thinking from strategy and tactics from operational thinking frames of reference became confused and the process was sometimes reversed."[536]

Quite a few Israeli scholars and military men tend, nevertheless, to hold that the IDF's doctrine before the Yom Kippur War was not bad, it just was not used as planned. According to Doctor Shai, the mobility of the mind, which had been the central item in the "Constant Flow" doctrine, was still appreciated at the operational level. Major General Adan confirms this. According to him, between the Six Day War and the Yom Kippur War offence and the tendency to transfer battles to enemy territory still dominated in research, in training and

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[534] Dupuy, p. 367 and Rothenberg, p. 199.

[535] Schiff (October Earthquake), p. 298 – 299 and Williams (1989), p. 270 and 274.

[536] Tal, p. 30 – 31 and 34 and Schiff (October Earthquake), p. 143.

in IDF exercises at both the tactical and operational levels. Therefore, the reason for the gap between strategic and operational thinking could well have been as General Tal described it. Military victory in 1967 and its consequence, operational depth, which had not been in existence before the Six Day War, confused thinking at political and higher military levels, but did not cause any remarkable doctrinal changes.[537]

It is also worth mentioning that quite many of the Six Day War divisional commanders resigned in the early 1970s. According to Raanan Gissin, this rapid turnover of senior officers created a situation where "the cardinal principle for combat command, i.e. the unity of command had to be violated so that the General Staff could impose its control over the conduct of operations." The retired generation represented the military innovation on which the IDF had been built. At least part of the mobility of the mind that had levelled the disproportion of manpower and equipment between Israel and her enemies during the early decades of Israel's existence vanished with these officers. In addition, continuous if less dramatic fighting during the War of Attrition might have called for less last minute improvisation. This obviously led to a higher degree of methodical staff work while enthusiasm and excitement might have been largely replaced by repetitive routine and boredom calling for different standards of discipline. This description, made by Brigadier Bagnall, seems to have been true in the IDF on the eve of the Yom Kippur War, at least in the peace-time army and especially in its higher staffs. However, at the tactical level the IDF maintained, according to Yigal Allon, its constant alertness to prevent surprise attacks; i.e., commando raids, terrorist activities, shelling and air raids and on the other hand a full-scale war, whether in the form of an enemy crossing of the cease-fire lines in big formations, or marine and paratroop landings. This supports Adan's view of the unchanged operational doctrine.[538]

Professor Handel estimates that Israel's major weaknesses in the War of Attrition were means and ends that did not match, and strategy that was too reactive. In addition, the opponent's aims were not understood and lessons were not learned. Doctor Levite goes further. According to him, the vague idea of military doctrine between 1967 and 1973 – including the Yom Kippur War, was a consequence of the success in the Six Day War that reinforced the IDF's cult of offensive, which later haunted the IDF. According to him, "the extreme bias in favour of offensive operations had caused the loss of defensive skills, and dogmatisation of Israeli military thinking." In a way,

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[537] Discussions with Doctor, Colonel (ret.) Hanan Shai Aviv and interview of Major General (ret.) Avraham Adan.

[538] Allon (1970), p. 101, Gissin, p. 357 – 358 and Bagnall, p. 206.

See also Perlmutter (1978), p. 90 and Adan, p. 70 – 71

According to Gissin, 33 top ranking commanders (Colonels to Major Generals) were replaced in 1972 and 1973. According to Perlmutter, General Elazar rejuvenated his officer corps during his tenure as Chief of Staff, often also with secondary arguments that had nothing to do with past experience or professionalism. While this statement might be too sharp, it is obvious that a lot of professionalism was wasted. According to Adan, this should have not been done if there was a threat of war. In these changes, only a few rose in rank in the same fields.

General Adan supported this statement after the Yom Kippur War by saying that "between the War of Independence and the Six Day War the IDF lost the professional capability to deploy defensively." The result was that at the operational level Israel left its defences on the Suez Canal and on the Golan Heights at the level of isolated strong points. In this regard Cordesman and Wagner state that Israel "never came to grips with the need for positioned fixed defences." Instead, Israel relied on early warning for the background of the mobilisation that would have also formed the forward defence.[539]

In addition during the War of Attrition, for the first time since Israel became independent, public opinion did not unanimously back operations on the Egyptian front. According to Zvi Lanir, the public was not united in the firm belief that the War of Attrition was fought to protect the very existence of Israel. This, for its part, weakened the strategy of denial approach, which was based on deterrence and if a war broke out, on a short war concept, not on a series of engagements in a prolonged battle. Lanir also maintains that military doctrine became a factor in the political process of decision making. The influence of a static defence doctrine along the Suez Canal during the pre-Yom Kippur War period supported the political conception of non-withdrawal from the water line without a formal peace agreement. This all crippled the Israeli military doctrine in the new situation. According to General Tal, this was even worse than the confusion of military and political thinking, meaning the undermining of the national consensus and the emergence of doubts and disagreements about national goals and objectives. This was especially serious because it touched on one of the most vital components of Israel's strength – motivation and morale.[540]

However, Handel also sees several strengths in the IDF during the War of Attrition, especially at the operational and tactical levels. They were the motivation and capability to implement raids and small commando operations. In this light, excluding the conflicting opinions on Israel's war policy and strategy between the Six Day War and the Yom Kippur War, Doctor Levite's concept of the cult of the offensive in the IDF is not completely fair. It is true that the mobile and offensive operations of the short war concept were no longer valid between the 1967 and 1973 clashes, but this was due to the political context that limited offensive action for fear of escalation. It is also true that the concept of "defensive defence" had profound implications for the IDF's military doctrine, as Zvi Lanir notes.[541] Instead, it is unfair to say that the tendency towards offence at the tactical and operational levels was a result of dogmatisation or that "defensive defence" had negative implications for tactical and operational initiative, improvisation and the ability to exploit opportunities. These sources of military strength in the IDF did not vanish in the pre-Yom Kippur War period. Rather the orientation towards offence showed an appreciation of the situation. At the tactical and operational levels of warfare in an all-out war, the outnumbered party did not have the luxury of only being

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[539] Handel, p. 566 – 568, Levite, p. 9 – 10 and Cordesman & Wagner, p. 21.

[540] Tal, p. 30 – 31 and 34 and Lanir, p. 30 and 56.

[541] Handel, p. 566 – 568 and Lanir, p. 29.

reactive. The IDF had to maintain the traditions of flexible thinking, which for its part was a prerequisite for the ability to conduct mobile operations. The problem was more the spotty link-up of the levels of warfare. Therefore, it can be said that the concept of "defensive defence" in Israel was a strategy that consisted of three almost separate parts; rigid defence on the cease-fire lines at the strategic level, preparations for offence at the operational level and use of tactical forces in commando and counter-guerrilla operations at the tactical level. Especially problematic was the gap between the strategic and operational levels where the former did not provide precise direction for operational implementation.

The opinions above illustrate the confusion that existed in Israel after the Six Day War. There was a firm belief that the next war would be a limited conflict that could be coped with by using static defence. The strategic solution was therefore obviously a consequence of the assumption that the Arabs would not be capable of launching an attack for a long time. However, this strategy did not take form in the operational and tactical fields despite the fact that already during the War of Attrition this strategy was against the foundations of the doctrine – to avoid a prolonged and exhausting war. Therefore Handel's statement "poor learning of lessons" is quite apt; changes in operational doctrine were not made.[542]

According to everything above, perhaps the IDF's most serious failure was that it did not see the future battle after the War of Attrition. Despite the failure of the IAF's strategic bombing against Egypt's inland targets, which finally stopped the fighting during the War of Attrition, the government did not re-examine its decision-making process. In addition, the decision to return to the "no peace, no war" state of affairs was backed by the superpowers. Although the IAF was quite successful in its missions, the Israelis contented themselves with looking for technical countermeasures. They refused to understand that something basic and essential was in the process of changing, and that the IDF could not mainly rely on the Air Force as "flying artillery" anymore, as Tal notes. The Israelis did not realise that Israel's far greater firepower, when compared to all the Arab states, would not save them in the tactical and operational land battles of the coming years. Therefore, the mistakes that were made were not so much failures of techniques or doctrines, but mistakes of the supreme command, which did not succeed in anticipating and preparing for future battles, as Zeev Schiff also writes in his book *October Earthquake*.[543] There also were exceptions, but in general, Israel's government and the IDF were confident in the lull after the War of Attrition of the performance of their

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[542] Lanir, p. 29 and Gissin, p. 329.

See also van Creveld (1998), p. 220 and Herzog (1975), p. 41.
According to van Creveld, when General Elazar entered the post of Chief of Staff in 1972, he replaced the existing "*Goshen*" plan with a limited war concept "*Ofek 1*". According to "*Goshen*", the Arabs would have been able to confront Israel with no fewer than fifteen divisions (of which eleven would be Egyptian) and 5,000 tanks, though it was estimated that this would not have been possible before 1976.
Herzog also states that Israeli intelligence estimated in 1973 that the Arabs would not be able to launch an all-out war before sometime in 1975.

[543] Schiff: October Earthquake, p. 306 – 307, Tal, p. 28 and 34 and Handel, p. 559.

armed forces. This was an illusion and the Yom Kippur War proved that this was a delusion. In the "no peace, no war" era, Israel experienced the most common error of armies; it prepared for the last war that it had fought.

11. THE YOM KIPPUR WAR

The fifth Middle Eastern war, the so-called Yom Kippur War, broke out on 6 October 1973 at 14.05 hours when the Egyptians and the Syrians launched a joint offensive against Israel.[544] At the strategic level, the start of hostilities was a surprise. However, some evidence that something was about to begin had been gathering in Israel. Therefore, while at the strategic level the Israelis failed to read the intelligence information, at the operational and tactical levels indications of an all-out war were much clearer and some preparations were also made to cope with this threat.

The Yom Kippur War was fought on two fronts: on the Golan Heights and on the Sinai/Suez/Egyptian front. In addition to Egypt and Syria, other Arab countries also committed their forces to show Arab solidarity, but their numbers and effect were quite small. Jordan did not open a third front, rather it sent two armoured brigades to the Golan. According to Trevor Dupuy, Jordan's caution was a consequence of Jordan's ineffective air defence system, a complete lack of antitank missiles and a small and outmoded air force.[545] War against Israel would have been disastrous, as non-participation would have been politically. Therefore, a defensive posture along the Jordan River while at the same time augmenting the Syrian war effort was seen as the best solution.

The phases of the Yom Kippur War are divided in different ways in the studies and literature. The most lucid manner of investigating the course of events is to examine the two fronts one at a time.[546] On the Golan Heights, the fighting can be divided into three phases from the Israeli point of view. The first phase, the period from 6 to 8 October can be described as having been a containment and holding phase when the IDF was forced to retreat, especially on the southern edge of the Heights. The period from 8 October, after the arrival of reserves, up to 10 October was a counter-attack phase. During these days, Israel succeeded in retaking the territory it lost. Finally, from 10 to 14 October, the IDF launched a major offensive towards the Syrian capital city of

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[544] Often this war is called the October War as well. The Arabs use the name the *Ramadan* War after the holy month and the Egyptians also use "Operation *Badr*". In the latter case, the 6 October of that year marked the 1,350th anniversary of the battle of Badr, which launched Mohammad's triumphal entry into Mecca and the subsequent spread of Islam. Herzog also uses the name the War of Atonement together with the Yom Kippur War. Yom Kippur is the holiest day in the Jewish calendar, the Day of Atonement. See for example Aker, Frank: October 1973. The Arab-Israeli War, Archon Books, Connecticut 1985, p. 16 and Herzog (1975). The title of Herzog's book is The Atonement War.

Several sources give 14.00 as the time when the war started. 14.05 is more generally used.

[545] Dupuy, T. N: The War of Ramadan. An Arab Perspective of the October War, Selected Readings on the Yom Kippur War, United States Army, Institute for Military Assistance, August 1975, p. 56 (original text in Army, March 1975).

[546] Another way to describe the course of fighting might be the schema that Rothenberg has used. He divides the war into four major phases. It began with a holding phase, 6 – 7 October, and continued with only partially successful counter-attacks on 8 – 10 October. This was followed by the Israeli offensive against Syria, complemented by the repulse of an Egyptian assault on 11 – 14 October. The last phase was an Israel offensive across the Canal, on 15 – 25 October. See Rothenberg, p. 185.

Damascus. This operation was stopped in front of the inner defence line of Damascus on 14 October. In addition, on 21 – 22 October the Israelis recaptured the observation post on Mount Hermon that they had lost on the first day of the war. This operation was separate from the other operations on the Golan Heights.

Four phases can be seen on the Egyptian front from the Israeli viewpoint. The first was the containment phase, which took place on the same days as on the Golan, 6 to 7 October. The first counter-attack was launched on 8 October with poor results and after that the Israelis moved to a holding action that lasted a week up to 15 October. The holding phase in the Sinai included a major Egyptian attack that was repelled by 15 October. The last phase began on the night between 15 and 16 October when the Israelis started their offensive across the Suez Canal into Egypt's rear. This phase ended with the siege of the Egyptian 3rd Army, which lasted up to the final cease-fire on 24 October.

11.1. Arab strategy versus Israeli expectations

According to Egyptian President Anwar Sadat's memoirs, the decision to go to war was made on 30 November 1972.[547] Afterwards, the time that was left between the decision and 6 October 1973 was spent on different kinds of preparations; including training, tactics, organisations and armament. By April 1973, a coalition with Syria was agreed upon; according to this plan Israel would have to fight on two fronts simultaneously. However, despite this concept for an all-out offensive, the Egyptians set limited objectives for the war in accordance with their capabilities. The Syrians later also accepted these aims.[548]

According to Field-Marshal Mohamed El-Gamasy, the war aim was "to upset the regional political and military balance and lay the groundwork for conditions better suited for exploiting the power struggle in the region." In this framework, the Arabs chose their strategy as follows:

- Force Israel to fight on all fronts at the same time and prevent its strategy of fighting on one front at a time.
- Use both the Syrian and Jordanian fronts to expose Israel's heartland, especially through the Air Force.

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[547] Sadat, A: In Search of Identity, Collins, New York 1978, p. 237.

[548] Gawrych (1996), p. 11 – 12, Wakebridge, Charles: The Egyptian Staff Solution, Military Review, March 1975, p. 4 and 6 and El-Edroos, S. A: The Hashemite Arab Army 1908 – 1979, Amman, Jordan 1980, p. 485 – 486.

The decision included the deportation of the Soviet military advisers in Egypt. According to President Sadat, this would give him freedom of action. Syria did not do the same.

See also Asher & Hammel, p. 50 – 51 and O'Ballance, Edgar: No Victor, No Vanquished. The Arab-Israeli War 1973, Presidio Press, Novato CA 1997 (original 1978), p. 37.

According to Asher and Hammel, Syria's President Assad did not initially support Egypt's limited war concept. Only in June 1973 did he acquiesce with the decision to recover only the territories lost in 1967.

- Disperse Israel's mobilised and strategic reserves.
- Block Israel's naval lines of communication in the Mediterranean Sea and in the Red Sea.
- Use the *Fedayeen* guerrillas extensively within Israel itself.
- Start offensive action as soon as possible. Time was seen as being to Israel's advantage.[549]

In addition to the political and military activities taken on the road to the war, the Arabs implemented a long-term operation for deception. By building defences along the Suez Canal line, the Egyptians were able to cover their preparations and train their forces. In annual autumn manoeuvres of various sizes, the troops practised co-operation, including crossing operations followed by an advance into the desert. Syria prepared itself likewise. In the political arena, the Arabs still showed interest in a peaceful solution to the "no peace, no war" situation. In addition, several smaller events were planned and implemented to mislead the Israelis: including a train hijacking in Austria to call Israel's attention to this secondary question, an announced demobilisation, officer pilgrimages and high level ministerial visits, all in the first half of October 1973.[550]

Finally, the period that the Arabs selected for their attack depended on a full moon, when the effects on the tides in the Suez Canal would be at a minimum. Yom Kippur also happened to be in the favourable time period. On that day, the readiness and strength of the Israeli fortifications both in the Sinai and on the Golan Heights were expected to be slight.[551]

The concentration of Arab forces was not unknown to the Israelis. Many studies point out that there was no lack of advance warning of the coming war in Israel. However, there were weaknesses in the interpretation of the data. After the Six Day War, the Intelligence Branch of the General Staff had become the senior intelligence agency. Therefore, while its tactical intelligence usually was good, its strategic evaluations left, according to Rothenberg, something to be desired. Zeev Schiff tends to hold a similar view. Despite Israel's security situation, she had no national defence council. The Ministerial Committee for Defence Affairs lacked staff workers as was also the case within the government. This meant that civilian authorities had to base their

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[549] El-Gamasy, Mohamed Abdel Ghani: The October War, The American University in Cairo Press 1993, p. 130 and 161.

Major General (later Field-Marshal) El-Gamasy succeeded Lieutenant General Saad El-Shazly as Chief of Staff of the Egyptian Army in the later phases of the Yom Kippur War. It was said that Shazly collapsed during the war. However, his replacement was obviously more a consequence of different views on how to finish the war.

[550] Wakebridge, p. 8 – 9.

[551] El-Gamasy, p. 180 and Dupuy (1975), p. 50.

judgments purely on data presented by the Intelligence Branch without the possibility of verifying the sources of information.[552]

In 1973, the IDF and its Intelligence Branch were still greatly concerned with the war against terrorism. However, the concentration of 300,000 men with thousands of tanks, and the transfer of artillery, armoured reserves, heavy bridging equipment and fighter bombers forward in the first days of October 1973 simply could not escape notice, as van Creveld mentions. Nevertheless, the Israelis did not see this as an imminent threat. This was based on the assumption that the Egyptians could not risk a canal crossing, while a Syrian attack was thought to be more probable but less risky. On 5 October, one day before the start of the hostilities, Prime Minister Golda Meir invited her "War Cabinet", consisting of several central ministers and military men, to a session to estimate the probability of a war. In this meeting, the Head of the Intelligence Branch, Major General Eliyahu Zeira, who had an independent status in parallel with the Minister of Defence and the Chief of Staff, reported on the information in Israeli hands, but suggested that war was not imminent. Prime Minister Meir, Minister of Defence Moshe Dayan and Chief of Staff, Lieutenant General David Elazar agreed, although the mood was, according to Schiff, more pessimistic in the Central Security Institution.[553]

Despite the results of the Cabinet meeting, the IDF headquarters had already declared *Konenut Gimel* (Alert C), the highest state of alert for the standing peace-time army. In addition, the 7th Armoured Brigade was ordered to the Golan to reinforce Israeli defences there. These decisions, which General Elazar also announced in the Cabinet session, were of crucial importance, especially on the Golan Heights where the IDF had much less operational depth than in the Sinai.[554]

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[552] Rothenberg, p. 178 – 179, Schiff (October Earthquake), p. 35 – 37 and Ben Meir, 35, 48 – 50 and 94 – 95.

The role of civilian control in military matters and intelligence was reinforced according to the suggestions of the Agranat Committee after the Yom Kippur War. However, the role of the Head of Military Intelligence was not institutionalised despite several changes in practice.

[553] Van Creveld (1998), p. 239 and Schiff (October Earthquake), p. 16 – 18, 23, 26 – 27 and 101.

However, the possibility of an Egyptian attack was, according to Schiff, already planned for in 1969. At that time, the IDF held a General Staff war game that included a possible Egyptian afternoon offensive. General Weizman was then responsible for the underlying assumptions, which held that the best time for an Egyptian crossing offensive would be between 14.00 and 15.00 hours. Timing like this would have allowed the Egyptians a few hours of daylight, without over-exposing them to the Israeli Air Force.
See also Rothenberg, p. 178 – 179.
According to Rothenberg, General Zeira relied heavily on sophisticated electronic equipment. This was a consequence of Zeira's stay in the United States as a military attaché, which appeared to give him an inflated view of American power and commitment to Israel.

[554] Katz (1996), p. 134 – 135.

11.2. The Golan Heights – from mobile defence to offence

11.2.1. Plans and preparations

The Syrians committed five divisions and three independent brigades to the battles on the Golan Heights. Expeditionary forces from other Arab countries consisted of an armoured division from Iraq, armoured brigades from Saudi Arabia and Jordan, a Moroccan brigade, and commando units from the Palestine Liberation Army. With this starting force of about 60,000 soldiers, some 1,200 tanks, 600 artillery pieces and 275 combat aircraft, the Syrians planned to break through Israeli defences on the Golan Heights at three points. According to Asher and Hammel, Syria's operational plan did not so much focus on fighting as on mowing down the opposition. This was based on the assumption that Israel, under massive attack by Egyptian armed forces on the Sinai front, would not be capable of containing the mass and firepower that the Syrians planned on committing.[555]

In the overall plan described above, the essential elements of Syria's operation were the isolation of the Golan from Israeli reinforcement, the disruption of support and command facilities and the overpowering of Israeli combat units. Infantry divisions – reinforced with additional armoured brigades – were to break through in the first echelon: the 7th Infantry Division in the north stretched along the Kuneitra – Damascus road, the 9th Infantry Division in the centre in the Kushniya region aimed at dividing in two to the north and south and the 5th Infantry Division along the approach from Nawa to Rafid, an area that the Israelis called the "Rafid Opening". These main efforts were to form a double envelopment to destroy the Israeli forces on the Golan Heights. Behind these infantry divisions was the second echelon, two armoured divisions, which were to rush through the gaps, overcome local Israeli reserves, exploit forward and finally reach the escarpment overlooking the Jordan River Valley. The 3rd Armoured Division between Sassa and Katana was to reinforce the northern axis of attack, and the 1st Armoured Division near Kiswe prepared to add its strength to the southernmost axis. These divisions were also Syria's operational reserves and in this context responsible for the defence of Damascus. Tactical air support was arranged to begin with the first attack and afterwards to cope with Israeli reactions. In addition, helicopters were to transport commandos for deep raids in conjunction with border actions to seize bridges over the Jordan and seal the battlefield off from reinforcement.[556]

In October 1973, Israel's wartime manpower strength was over 310,000 men. The volume of major equipment varies depending on the sources, but some average numbers can be given; some 2,000 tanks, over 3,000 APCs/half-tracks, less than 600 artillery pieces and some 475 combat aircraft.

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[555] Knapp, George E: Antiarmor Operations. Antiarmor Operations on the Golan Heights, October 1973, Spiller, Roger J. (General Editor): Combined Arms in Battle since 1939, U.S. Army Command and General Staff College Press, Fort Leavenworth, Kansas 1992, p. 30, Wakebridge, Charles: The Syrian Side of the Hill, Military Review, February 1976, p. 22 and Asher & Hammel, p. 55.

[556] El-Edroos, p. 494 – 495, Knapp, p. 30 and Asher and Hammel, p. 57 – 59.

The ground forces were organised in seven armoured divisions and 18 independent brigades.[557]

On the Israeli side, responsibility for the defence of the Golan Heights rested with the 36th Armoured Infantry Division under the command of Brigadier Rafael Eytan. This division was the only peacetime force in the Northern Command and the only mechanised division in the IDF at the time. This force consisted of parts of three brigades and one NAHAL battalion. Its strength was about 12,000 men, less than 200 tanks and 44 artillery pieces that were all, however, self-propelled. This symbolises the crushing superiority in force ratio that the Syrians enjoyed: 10:1 in manpower, 7:1 in tanks and 25:1 in artillery pieces. The understrength 188th Armoured Brigade (*Barak*), which was the only peace-time armoured force on the Golan, manned the southern part of the Purple Line from Rafid to Kuneitra. The 7th Armoured Brigade occupied the line north of Kuneitra to the slopes of Mount Hermon. A battalion of the *Golani* infantry brigade and the 50th NAHAL Paratroop battalion, in squad and platoon-sized groups, occupied the scattered strongpoints along the Purple Line. In addition, there were about 16 NAHAL settlements, mainly in the area of Kuneitra, but they had, according to Wakebridge, no defences to speak of and were therefore evacuated almost as soon as the fighting began. In case of war, the regular components of Eytan's division were to be augmented by a reserve armoured brigade and two reserve mechanised brigades. In addition, two additional reserve divisions were to reinforce the Northern Command on the Golan.[558]

According to Knapp, the Israeli plan was based on the expectation that the active forces on the Golan would be able to act as a tripwire and to delay the Syrian advance until Israeli reserves could mobilise and deploy. Brigadier Kahalani – at the time commander of the 77th Battalion of the 7th Armoured Brigade – confirms this in his book *A Warrior's Way*. Therefore according to him, the deployment was also planned to be nose-heavy; all forces in the strongpoints were stationed very close to the border, including the tanks of the *Barak* Brigade. The intention was to meet force with force, though the tanks were, according to van Creveld, not primarily intended to man defensive positions along the Purple Line; rather they were to be used in concentrated counter-attacks. On 6 October the *Barak* Brigade had, however, four battalions deployed along the Purple Line; infantry in the strongpoints and the tank battalions in prepared battle positions on the flanks and in the rear of the infantry. According to van Creveld, the decision to also reinforce the Purple

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[557] Cordesman & Wagner, p. 16, Dupuy (1992), p. 602, Gabriel, p. 21 and The Military Balance 1973 – 1974, p. 33.

[558] Asher & Hammel, p. 86, Dupuy (1992), p. 613, Knapp, p. 29, Wakebridge, p. 21 and Schiff (October Earthquake), p. 64 – 65.
Dupuy calls the 36th Division the 36th Mechanised Division.
See also Katz (1996), p. 139.
According to the author, the sectors between the *Barak* and the 7th Brigade were arranged at the very outbreak of the fighting when the commanders personally divided the responsibility for the defence of the Golan Heights between themselves. This also shows the surprise caused by the attack, especially at the divisional and command level. It also illustrates the ability of sub-commanders to take the initiative.

Line with tanks was based on the assumption that the Syrian preparations would turn out to be only the usual border clash. However, the 7th Brigade was not deployed in hull-down positions in the Purple Line right at the beginning. The idea was to keep this force in reserve. However, because the Syrians attacked on a wide front, the 7th Brigade was also committed to frontline battles after the first hours of the war.[559] The strengths, orders of battle and losses of the Yom Kippur War can be seen in Appendix 17. A map of the operations on the Golan Heights during the Yom Kippur War can be seen in Appendix 18.

11.2.2. Holding phase – mobile defence

The Syrians started their offensive with a 55-minute artillery and aerial barrage. After this, all three infantry divisions, spearheaded by tank brigades, joined the offensive in their own directions as planned. According to Schiff, the operational principle of the Syrians was to bypass Israeli defences in depth and to not tangle with the strongpoints on the Purple Line because there would be time for them later. This was a good plan, but at crucial times on the first night and second day of the battles the rigid command system failed to make a decision about the use of reserves, which was partly also a consequence of the unexpectedly tough Israeli defence.[560]

Brigadier Syed Ali El-Edroos (Pakistan Army, ret.), who has written a study entitled *The Hashemite Arab Army 1908 – 1979*, has also studied the wars of the Middle East from the Arab point of view on the whole. According to him, the Syrians had opted for the Soviet doctrine of "Continuous Penetration" whose central concept was the surprise of the enemy by concentrating large forces which would breakthrough, wave after wave, by using vast volumes of fire focused on a narrow sector of the front. Therefore, it was essential in this doctrine to keep the breakthrough point open even at the expense of great loss of life, to advance through it to encircle the enemy forces and to finally destroy them.[561]

The adoption of the Soviet doctrine had many advantages, but also disadvantages. According to El-Edroos, the main reason for operational failures was the rigid orthodoxy with which the Syrians used the inflexible and unyielding "Continuous Penetration"; originally designed for the Russian temperament and environment. The Syrians moved in a tight formation bunched closely together in order to maximise their fire potential and to

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[559] Knapp, p. 29, Kahalani (1994), p. 161, Kahalani (1984), p. 12 – 13 and Asher & Hammel, p. 81 and 86.

See also Schiff (October Earthquake), p. 50 – 51.
According to Schiff, the C alert was an order to command posts and units to be prepared and, in the standing army, a cancellation of leave. It was not a specific order to deploy or take up positions. Therefore, when war broke out, the *Barak* Brigade's tanks were not quite at their firing points, though they stood ready for war in their tank parks in the vicinity of the strongposts.

[560] Asher & Hammel, p. 85 – 86, Schiff (October Earthquake), p. 64 – 65.

[561] El-Edroos, p. 493.

confuse the individual targeting of the Israeli tanks. The latter worked well, the former less. According to Katz, the Israeli tank positions had a hard time identifying clear silhouettes of individual Syrian tanks in the middle of the smoke and clouds of dust. In theory, the Syrian forces were also constructed in accordance with combined arms principles where the balance of different branches was in harmony. In practice, this was not the case. Most glaring was the lack of co-operation between the tanks and the motorised infantry equipped with antitank weapons. Therefore, the principle of massing wave after wave of forces led to unnecessary losses, which were yet more aggravated by the fact that the armoured units raced forward ahead of the engineers, which jammed the troops against the Israeli antitank ditch.[562]

From the Israeli point of view, the initial Syrian artillery and aerial barrage was just long enough to allow the Israelis time to overcome their shock and fear, unlike in the Sinai where the bombardment lasted only some 20 minutes. Despite this and despite their problems along the antitank ditch, the Syrians were able to push forward in the southern part of the Golan. The *Barak* Brigade, which was responsible for the defence of the southern sector, had too much ground to cover, especially when comparing its mission to a terrain that favoured the Syrian advance more than the northern sector defended by the 7th Brigade. Therefore, every *Barak* Brigade tank on the Golan had been committed in less than 40 minutes of action.[563]

However, the Israelis had several advantages, which were to become crucial during the battles. First, the Israelis knew the terrain, including those units that had been transferred to the Golan on the eve of the war. Brigadier (then Lieutenant Colonel) Avigdor Kahalani, whose battalion was sent to the Golan nine days prior to the alert, describes the preparations for a possible war on the Golan in his book *The Heights of Courage*. According to him, Colonel Avigdor Ben-Gal, commander of the brigade, who had a premonition of the coming war, also rotated officers of the remaining two battalions to allow them to study the terrain on the Golan. This included range-finding cards for each position. Second, Israeli commanders and sub-commanders were willing and able to delegate decision-making and take independent decisions. This is also revealed in Kahalani's text; the idea of what should be done in each area of the Golan was discussed before the war and when the main part of the brigade arrived on the Golan, this planning process was extended to the tank-commander level. There is also good reason to suppose that Colonel Yitzhak Ben-Shoham's *Barak* Brigade and the infantry battalions on the Golan Heights had done the same. Finally, despite the huge imbalance between the strength of the Syrian and Israeli forces during the first two days of the fighting, Israel's defence on the Purple Line succeeded quite well. Only three strongpoints fell

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[562] Ibid., Katz (1996), p. 158, El-Edroos, p. 493 and Asher & Hammel, p. 90.
See also O'Ballance (1997), p. 125 and 218 – 219.
According to one U.N. officer interviewed by the author, the Syrian attack "was not like an attack, it was like a parade ground demonstration."
O'Ballance also estimates that co-operation between the Syrians and the expeditionary forces from other Arab countries hardly existed. However, this was not important on the whole because of the small size of the foreign forces.

[563] Asher & Hammel, p. 85 – 86 and 92 and Aker, p. 35.

during the assault. The rest maintained their ability to continue fighting and, as a matter of fact, these positions caused severe problems to Syrian supply columns that tried to keep up with the armoured advance. Later on the strongpoints in Israeli hands were central gateposts when the IDF started its counter-offensive.[564]

OC of the Northern Command, Major General Yitzhak Hofi's dispositions also clearly illustrate the Israeli understanding of the military geography on the Golan Heights. Already before the arrival of the reserves, General Hofi had made several changes in the order of battle. The most important of them was the decision to return the 77th Tank Battalion from the *Barak* Brigade to the 7th Armoured Brigade. The 77th Battalion had been in the area the longest and therefore had the best chances of fulfilling its mission. This decision reflected Hofi's concern for the northern sector, which was crucial especially from the viewpoint of a possible springboard for a counter-offensive. The *Barak* Brigade's responsibility for the less defensible terrain was also narrowed. However, this change was made by changing the chain of command between the two brigades, not re-deploying the units, which also shows – not only organisational flexibility – an understanding of the importance of the terrain. The knowledge of the battleground that was already adopted was more significant than a firm chain of command. At the same time as these changes, all command echelons anticipated the upcoming battles by gathering internal reserves.[565]

Bellamy sees the battles of the Golan as being near a linear attrition battle, unlike the events on the Sinai front where there was more room for a classic operational encirclement. This allowed the Israelis to swing round behind the Egyptians and knock them off balance. In the holding phase, there was not an option on either front. Instead, the IDF applied manoeuvre according to its doctrine of transferring the battles to enemy soil on both fronts later in the counter-offensives. In addition, it also is difficult to see the first two days of battle on the Golan as static battles of attrition, at least from the Israeli point of view. The Israelis tried tactical manoeuvre, according to the principles of mobile defence, avoided attrition and also succeeded despite the heavy losses that the Syrian fire inflicted on the defenders, especially on the *Barak* Brigade. By using small reserves, the Israelis were able to keep the Syrians in a posture of a constant change. The chief tactic was to approach enemy columns without being detected and set up ambushes. Although this action was mostly reactive, it obviously was also a consequence of the delegated command system, which enabled a better picture of the situation than the one the Syrians had. Therefore, it can be said that while the operational concept was not in Israeli hands in the holding phase, tactical initiative was never completely lost. This was a crucial point for motivation and furthermore, after

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[564] Katz (1996), p. 143, Asher & Hammel, p. 38, Kahalani (1984), p. 12 – 13, Kahalani (1994), p. 160, Wakebridge (1976), p. 22 and Knapp, p. 31.

[565] Asher & Hammel, p. 106 – 108, Williams (1989), p. 205 and Katz (1996), p. 138.

the arrival of the reserves, a good foundation for switching from the holding phase first to counter-attacks and then to a counteroffensive.[566]

11.2.3. Counter-attack – the search for possibilities

The Arabs were wrong in one calculation for the war; Yom Kippur did not complicate Israel's mobilisation, on the contrary, all Israelis were easily reachable at home on that day and, in addition, the normally snarled roads were almost empty, which greatly facilitated mobilisation. Therefore, despite the fact that the Israelis did not have 48 hours of early warning for mobilisation and disposition of forces, in practice the main bulk of reserves were ready for action in less than 48 hours. Maybe not with the equipment or in the areas that were precisely planned for them, but ready for use anyway. This process showed amazing flexibility both in practice and in plans.[567]

Despite the fierce pressure on both fronts, the depths of the Sinai allowed further possibilities for defensive holding actions and therefore General Headquarters gave priority to the Golan front on the second day of fighting, including the concentrated use of the Air Force. At first the reserves were sent to join the blocking battle, and to reinforce the job of the standing army, especially in the critical southern sector of the Golan. According to Schiff, this contributed to the salvation of the Golan, but it prevented General Headquarters from creating an immediate pressure point on either front. However there was no question of mounting an all out counter-offensive in this phase, all forces were committed to holding actions and stabilisation of the situation. Nevertheless, on the Golan the Syrians were also slowly losing their operational initiative after the evening of 7 October. They were unable to maintain their initial success despite the fact that they identified tactical opportunities in the Rafid area and committed one of their reserve armoured divisions to battle in this area.[568]

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[566] Kahalani (1984), p. xi, Bellamy, p. 113 and Aker, p. 75.

See also Asher & Hammel, p. 138.
According to the authors, ambushes were trained for before the war. However, it is obvious that they were not trained for implementation in certain areas, but according to the situation and according to a commander's judgment.

[567] Katz (1996), p. 181 and Asher & Hammel, p. 133 – 134.

Three fully constituted reserve brigades and two separate reserve battalions deployed on the Golan before nightfall of 7 October. This was about 28 hours after the onset of the war. One advantage was also that the separate battalions were, according to Asher & Hammel, trained on the Golan.

[568] O'Ballance (1997), p. 134, Knapp, p. 31 and Barclay, C. N. (Brigadier, British Army, ret.): Learning the Hard War. Lessons from the October War, Selected Readings on the Yom Kippur War, United States Army, Institute for Military Assistance, August 1975, p. 46 (original text in Army, March 1974).

See also Schiff (October Earthquake), p. 92 – 93 and 106.
The decision to reinforce the Golan first was a result of a meeting of the War Cabinet on the morning of 7 October. In this meeting, Dayan had displayed great pessimism when General Elazar informed him that the situation was bad but did not require a retreat. After this discussion, General Bar Lev (ret.) was sent – without command authority – to the Northern

The question of why the Syrians were not able to extend their tactical success to operational success has remained one of the secrets of the Golan battles, although plenty of solutions are given in different studies and the literature. On the night between 6 October and 7 October, the Syrians hesitated over where to deploy their reserves. According to Asher and Hammel, this decision-making process took about five hours; it took almost 12 hours to carry it out. One reason for this might have been the unwillingness to commit the armoured reserves to battle because these divisions were also responsible for the defence of Damascus. In any case, this delay gave the Israelis time to channel their first reserves to the most threatened areas.[569]

After the decision to first settle the situation on the Golan, Northern Command outlined a plan to first contain the Syrians and then drive them back to the Purple Line. According to this plan, the Israelis aimed first to balance the force ratio and at this stage launched specific limited counterattacks to establish a coherent defensive line through the southern Golan. Therefore, Brigadier Eytan's responsibilities were reduced when Major General Moshe Peled's reserve armoured division took over the main burden of the defence in the southern sector east of Lake Kinneret. In the meanwhile, the Northern Command started to create opportunities for a counter-offensive. According to this concept, Eytan's responsibilities in his southern sector were further reduced and Major General Dan Laner, whose armoured division had also just entered the Golan, assumed, in addition to his own forces, command of Eytan's forces in the sector. According to Asher and Hammel, this arrangement went against every pretence of organisational stability, except that of section by section and platoon by platoon, Laner repeated the outlines of his plans to units that had been placed under his command. By the morning of 8 October the Israelis were able to create a clear centre of gravity for their forces for a further counter-offensive.[570]

According to Asher and Hammel, the turning point of the war was on 7 October at 17.00, when Colonel Uri Orr's armoured brigade reached the Nafak Camp. At this stage, the Syrians also halted their offensive for a while. The Syrian thrusts had become jammed, their operational centre of gravity had not yet been achieved and finally the offensive culminated before it had reached

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Command to gather impressions. Towards evening, he called Prime Minister Meir and informed her: "The situation is bad. Perhaps very bad, but not desperate." This led to the decision to first settle the situation on the Golan Heights.

[569] Knapp, p. 30 and 32 – 33 and Asher & Hammel, p. 184 and 207 – 208.

See also van Creveld (1998), p. 232.

Van Creveld also gives an explanation that supports the theory that the Syrian southern flanks had been threatened, although he admits that even the Israelis seem to be unable to agree which of their units could have been responsible for this move. However, by this time Major General Moshe Peled, commander of the 146th Reserve Armoured Division, had met with Generals Bar Lev and Hofi, who had outlined a general plan to repel the Syrians behind the Purple Line. In accordance with this plan, General Peled suggested that the 205th Armoured Brigade, released to the Northern Command from General Headquarters' reserve, be immediately transferred to the southern end of the Golan before the implementation of the divisional plan. Therefore, the threat that the Syrians faced might have been the vanguard of this brigade.

[570] Asher & Hammel, p. 136, 178 – 179 and van Creveld (1998), p. 231.

the set operational objective. A high-level war conference was held at the Syrian supreme command at this time. According to the Syrian Minister of Defence, Major General Mustafa Tlass, the reason for halting the offensive for a while was, however, not a consequence of the loss of momentum due to the stubborn Israeli defence. It was the threat that the Israelis could pose if they advanced eastward along the northern valley route. The Syrian air defence was not able to guarantee close ground support in this sector because this area was outside the air defence screen. This reasoning, provided by Wakebridge, sounds logical and at least partly explains why the Syrians, after a pause, continued their offence in the northern sector of the Golan. Nevertheless, the Israeli mobile defence during the first two days should not be underestimated; it obviously caused delays that were a contributory cause to the war conference. On the whole, the Syrian halt gave the Israelis enough time to prepare a counter-offensive, which finally also happened on 10 October. In addition, the Syrian fear, the sheltered access via the northern valley route to the Golan Heights, was revealed to the IAF.[571]

By morning on 8 October, Peled's division had taken over responsibility for the defence in the southern Golan and during the day the main bulk of Laner's division joined the battles as well. On that day, the Israelis were already able to concentrate forces in certain areas, but in most cases the Syrian force concentrations were still too strong for direct assaults. Therefore, the Israelis applied their old tactics; they tried to encircle the Syrians and advance towards their lines of communications. This manner of fighting was especially typical in the reserve units, which were already familiar with tactics like this since the days of the Six Day War. At this time the Israelis also found a weak point in the Syrian lines and pushed to the Rafid – Kuneitra road. This move left the 1st Armoured Division without roads for supply and altered the tide of battle in the central Golan. From that moment, Syrian decision-making focused, according to Asher and Hammel, less upon regaining the Golan than upon containing possible Israeli initiatives.[572]

After the war conference on 7 October, the Syrians changed their centre of gravity for action to the northern sector of the Golan between Tel Hermonit and a hill named "The Booster". This area is ideal for tank movements and battle, and was important because an Israeli advance here would have threatened

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[571] Kolstela, Risto: Clausewitz ja Yhdysvaltain sotataito, (Clausewitz and the Art of War of the United States of America), a study of the General Staff Officer Course, National Defence College Finland, Gummerus Kirjapaino Oy, Saarijärvi 1998, p. 83 – 85, Wakebridge (1976), p. 29 and O'Ballance (1997), p. 137.

See also Cohen, p. 360, Dupuy (1975), p. 55 and van Creveld (1998), p. 232.
Several other reasons for the Syrian halt are also given. According to Cohen, in the most critical phases of the battles from the Syrian point of view, the Syrians ran out of air defence missiles for a 24-hour period until the Soviets were able to re-supply them. According to Dupuy, the Syrians were unable to provide logistical support to maintain the early momentum of the 5th Division. Van Creveld also writes that Israel threatened Syria with nuclear weapons. The two first arguments sound logical, although they alone don't explain the whole situation. There is not yet any information about the possible use of nuclear weapons. In any case, the Syrians continued their offensive after the break, whether they were threatened with nuclear weapons or not.

[572] Asher & Hammel, p. 221 – 223, 249 – 249 and 251 and Katz (1996), p. 155.

the Syrian flanks. Therefore, the Syrians also committed their other armoured reserve division, the 3rd Armoured Division, there. In practise this meant, however, the loss of concentrated effort. In the fierce tank-to-tank battles on the 8 and 9 October, the defending 7th Armoured Brigade was able to block the thrust despite the fact that the defenders were noticeable inferior in force ratio, though qualitatively they were better and obviously also more motivated.[573]

11.2.4. Counter-offensive – a return to operational offence

After 9 October, the initiative was completely in Israeli hands. They were able to push the Syrians slowly backward over the next two days. However, this move was a consequence of tactical initiatives – as had been the case during the Six Day War. Without concentrating force, the advance was also rather dissipated in the Syrian anti-armour belt. At first the Israelis had planned to continue their offensive in the southern sector of the Golan. The fact that the Israelis had implemented a brigade-level reprisal in this area in 1970 and therefore had experience with the terrain and possibilities in this direction supported this plan. Several other reason made the Israelis change their minds. First, the Syrians were too strong for Peled's division alone and if there was a need to continue the offensive immediately the concentration of forces would have taken too much time. Therefore, this possibility was excluded. There were already two divisions on the northern sector. Second and more important, the northern route was the shortest way to Damascus. If the Syrian capital was threatened, the Syrians would probably deploy their forces defensively and closer to Damascus. This idea fulfilled the principle of dislocation; if there were not enough troops to force the enemy to retreat, the enemy had to be pressured via other means such as threatening their vulnerable targets, in this case the capital city of Damascus. Third, the slopes of Mount Hermon would protect the flank of the advance and, in addition, made the support of the Air Force possible because it was now possible to use both the northern valley route and the "*Fatahland*" for sheltered access. Finally, the flatter terrain in the northern sector allowed the massing of forces, and made the Syrian tanks more vulnerable in mobile warfare.[574]

On 10 October, Chief of Staff, General Elazar ordered the tactical offensives to come to a stop by saying that the IDF needed to mount a general offensive into Syrian-held territory. According to Asher and Hammel, this information

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[573] Wakebridge (1976), p. 23 – 24 and Katz (1996), p. 155 – 156.

[574] Rothenberg, p. 192, Asher & Hammel, p. 256 – 257 and Aker, p. 87.
See also Leonhard, p. 98 and van Creveld (1998), p. 233.
According to van Creveld, Elazar's real objective in mounting the counter-offensive towards Damascus was to make the Syrians press the Egyptians to send more forces across the Suez Canal to help relieve the pressure on the Golan.
Leonhard gives an illustrative example of dislocation by describing the battle between Hercules and the giant. Because Hercules was too weak to face the giant in a direct battle, he had to throw the giant off balance. In this battle, Athena whispered in Hercules' ear: "Move the giant! Move the giant!" By threatening Damascus, the Israelis did the same thing. Elazar's idea of forcing the Egyptians to move can also be seen in this light.

was interpreted in the headquarters of the Northern Command as a preliminary order for a coming offensive within the next 24 hours. However, it still remains unclear whether the IDF already had an offensive plan for the Golan at the time, as they had for the Sinai front. Pasi Rekilä, who has studied tank and antitank battles on the Golan during the Yom Kippur War, states that Israeli operational plans ended with mobilisation and after that the idea was to act according to the situation. At the command level this might be true, although the existing operational doctrine stressed the principle of transferring the battle to enemy territory. If such plans existed, they are still secret today, obviously because the "no war, no peace" situation still continues on this front. Nevertheless, some data on offensive plans at a lower level can be seen; for example, in Kahalani's *The Heights of Courage*. On 9 October, Kahalani got a preliminary order, "Plan *Gil*", from his superior, Colonel Ben-Gal, to start an advance into Syria. General Adan also reveals in his book, *Banks of the Suez*, that the Israelis acted according to a plan on the Golan, which, however, might well also mean plans for the defensive phase. In any case, the Israeli cabinet approved an offensive into Syria on 10 October with the goal of moving within artillery range of Damascus by capturing Sasa in the third and innermost defensive line covering Damascus. The Israelis hoped to take Syria effectively out of the war with this drive by forcing Syria to accept a cease-fire.[575]

The attack, twin pronged, as Zeev Schiff calls it, began at 11.00 on 11 October; occurring at the same time as the final Syrian assault, which was aimed at taking Kuneitra. In manoeuvre, the Israelis were superior to the rigid Syrian command system and on the night of 11/12 October, the Syrians made – on recommendation of their Soviet advisers – the decision to withdraw to the Sasa Line. This line was regarded as being strong enough to stand up to Israeli pressure. It was also thought that it did not give the Israelis a possibility of encircling and destroying their troops in the outer defence fortifications, which were not continuous, as had been the case in the Six Day War. According to Schiff, the operational objective was to destroy the Syrian forces while the conquest of the terrain was not so important. This coincides with the principles of the Israeli operational doctrine, which stressed the importance of decisive victory. This aim, at least partly, also explains why the Israelis still tried to attack the Sasa Line, which they had reached rather quickly, from 14 October onwards. The Syrian forces were not destroyed although they had had to abandon most of their guns and vehicles. Beginning on the 13 October assaults on both sides continued until the day of the cease-fire, 22 October. The Israelis were mostly in a defensive posture and were able to hold the bulk

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[575] Asher & Hammel, p. 257 – 258, Gawrych (1996), p. 55 Kahalani (1984), p. 122, Rekilä, Pasi: Sotatoimet Golanilla 1973 panssarintorjunnan ja panssarien käytön kannalta tarkasteluna (Battles on the Golan Heights in 1973 from the viewpoint of Anti-tank Defence and Armour), a study from the General Staff Officer Course, National Defence College of Finland, Helsinki July 1995, p. 9 and Adan, p. 92.

On 9 October, Ben-Gal asked Kahalani: "Do you remember 'Plan *Gil*" to inform him of the coming operation. This question was about a preliminary order, which shows that something was planned beforehand in this sector of the Golan, although the preparations for this might also have happened during the state of readiness before the war.

of the Syrian, Iraqi and Jordanian counter-attacks. The Israelis held the Sasa Line up to the end of the war.[576]

The only offensive action in this period was the recapture of Mount Hermon. After the fall of the Israeli position on Mount Hermon, the IDF tried to recapture the post on 8 October with an improvised operation that did not succeed. The operation was repeated on 21 October, this time with a thoroughly planned and minutely co-ordinated set-piece joint operation. The timing of the simultaneous attack on the upper position with heliborne troops and on the lower positions with a combined force of infantry and tanks from different directions surprised the Syrians. This operation can be seen as a return to the tactics and principles that were applied during the War of Attrition in large counter-guerrilla operations in this area.[577]

11.3. Sinai – from tactical disasters to operational success

11.3.1. Plans and preparations

The Egyptian "Operation *Badr*" consisted of two phases. The first phase, the crossing, called for five infantry divisions to cross the Suez Canal and form five bridgeheads with a depth of five miles in 24 hours. This offensive was to be implemented on a broad front without a main effort. In 48 hours these bridgeheads were to be consolidated into two army level bridgeheads – including the transfer of the mechanised and armoured divisions to the east bank of the Sinai – with a depth of nine miles east of the Canal, also destroying Israel's mobilised reserves. Doctor Gawrych, who has interviewed some high-ranking Egyptian Yom Kippur-period officers, estimates that a third phase was planned as well. This was probably to proceed with an offensive eastward, most likely to capture the operational objectives in the vicinity of the Mitla and Gidi passes. This doesn't coincide with the concept of limited war aims, but the condition of being prepared for further missions depending on the situation can be interpreted as having been the third phase, which would not originally have been very precisely planned. However, according to Gawrych, the Egyptian Armed Forces trained and planned as if they would seize the

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[576] Schiff (October Earthquake), p. 178, Gawrych (1996), p. 55 and O'Ballance (1997), p. 339.

See also Dupuy (1992), p. 467 – 468.
On 13 October, three armoured brigades of Laner's division were able to ambush the entire Iraqi division near Tel Shaar. This illustrates Israel's superiority in mobile warfare rather well, although it also shows the lack of co-operation between Syria and her allies and the weaknesses in their operational intelligence.

[577] Katz (1989), p. 120 – 121, O'Ballance (1997), p. 214 and Schiff (October Earthquake), p. 276.

Although risky, the decision to use heliborne troops was taken to surprise the Syrians and to save time. Schiff describes that on foot the troops would have had to cross "*Fatahland*" on the Lebanese-Syrian border, which would have meant wasting many hours and fighting terrorists en route.

Sinai passes and expected to transfer some air defence missiles to the east bank for that offensive as well.[578]

The Egyptian war plan was based on a rather thorough knowledge of the Israeli war plans and doctrine, contrary to the previous wars. Despite the acknowledged Israeli superiority in air combat and in mobile warfare, it was assumed that with training, discipline and indoctrination the Egyptian soldier would become competent enough to face the Israelis, especially in defensive combat. A quick seizure of several large bridgeheads on the east bank, correspondingly, would give the Egyptians the initiative that was needed before consolidating a defence; the Israeli operational commanders in the Sinai were supposed to lose the important early hours by seeking to discover the Egyptian main effort. In addition, after the Israeli recovery from the first shock, they were expected to act according to their doctrine; launching rapid armoured counter-offensives. This gave the Egyptians the possibility of exploiting Israel's sensitivity to casualties. The IDF thrusts to rescue the personnel in the Bar Lev Line fortifications and the efforts to re-conquer the line were supposed to be blocked with antitank infantry while all the forces in the limited bridgehead and the second echelon were to be protected from the Israeli Air Force with the air defence network situated along the west bank of the Canal.[579]

The Egyptians committed a total of eight mechanised divisions, two armoured divisions, and 20 separate brigades in two armies to "Operation *Badr*". This amounted to 315,000 men, some 2,100 tanks and an almost equivalent number of APCs, over 1,200 artillery pieces, 550 combat aircraft and over 80 helicopters.[580]

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[578] Gawrych (1996), p. 20 – 22, El-Shazly, Saad: The Crossing of the Suez, American Middle East Research, San Francisco 1980, p. 36 – 39, El Badri, p. 19 and Loefstedt III, Arthur B: Yom Kippur 1973: An Operational Analysis of the Sinai Campaign, Naval War College, Newport RI February 1996, p. 7 – 8.

In contemporary Egyptian literature the third offensive phase into the depths of the Sinai is disputed. According to El Badri, the Egyptian operational objective was limited to a depth of 10 to 15 km in order to remain within the air defence umbrella. General Shazly, as well as War Minister Ahmed Ismail, also opposed the third phase because the Egyptian Air Force lacked the capacity to challenge Israel's superiority for control of the skies in the Sinai.
In his research, Doctor Gawrych interviewed Field-Marshal El-Gamasy, commander of the Air Defence Forces, General Muhammad Ali Fahmi and Chief of the Military Section at the al-Ahram Strategic Studies Institute, Murad Ibrahim al-Dessouki, who was commander of a mechanised infantry battalion during the Yom Kippur War.
See also Morris, John, S: U.S. Army Deliberate River Crossings: A Bridge Too Far?, School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, Kansas 1997, p. 19 and Luttwak & Horowitz, p. 346.
According to Morris, the decision to attack on a wide front was also a consequence of the Egyptian fear of Israeli air strikes.
According to Luttwak and Horowitz, the Egyptian war plan combined the strategic offensive of the Canal crossing with strictly defensive tactics immediately afterwards. In any case, as a matter of fact, the Canal crossing enabled the realisation of the strategic war aims via tactical defence. In this plan, the ties between the levels of warfare can easily be seen.

[579] El-Shazly, p. 224 – 225, Dupuy (1975), p. 49 and Gawrych (1996), p. 20 and 34.

[580] Dupuy (1992), p. 606 and 608 and Cordesman & Wagner, p. 16 and 24.

The Israeli defence in the Sinai, as on the Golan Heights, relied on the mobilisation of reserve forces, which constituted 2/3 of the ground forces of the Southern Command commanded by Major General Shmuel Gonen. Everything was based on the assumption that the IDF would have at least a 48 hour early warning of an invasion. Two different plans were created: "*Dovecote*" (*Shovach Yonim*) and "*Rock*" (*Sela*). In both plans, the Israeli General Staff expected the Bar Lev Line to serve as a defensive "stop line", as Doctor Gawrych calls it, a line that had to be held in every case.[581]

The "*Dovecote*" plan was to be applied in a limited crisis with only the regular forces of the Sinai Division, which was to be reinforced with additional troops, if necessary. According to this plan, one armoured brigade was stationed behind the forward line of fortifications. Its primary mission was to move forward and occupy the firing ramps along the front between the fortifications in case of an Egyptian attack. Two armoured brigades were positioned behind the defensive forward line. One was also to reinforce the forward line while the second prepared to counterattack the Egyptian main effort. With air support, it was expected that "*Dovecote*" troops could contain even a major assault until the reserves arrived. A significant detail in the "*Dovecote*" plan was the fact that the Sinai Division had no mechanised infantry, which was needed to cope with enemy antitank infantry. According to Adan, these units were reserves that were to be mobilised in case of an emergency.[582]

The other plan, "*Rock*", was for an all-out invasion. Should the regular forces prove inadequate for defeating the attacking Egyptian troops, then Israel would also mobilise reserve formations, two armoured divisions. In this plan, the main aim was to launch a counter-attack as quickly as possible, even over the Suez Canal if needed. This plan required air supremacy and elimination of Egypt's air defence system in the Canal area to allow air support for the armoured thrusts.[583]

When the Yom Kippur War broke out, Israel had fewer troops in the Sinai than even the "*Dovecote*" plan required. The total manpower on this front was 12 -15,000 men, less than 300 tanks, no mechanised infantry – according to Adan they were reserve troops – less than 50 artillery pieces and some 70 antitank weapons. On the Sinai front, the force ratio before Israeli mobilisation was similarly overwhelmingly unfavourable, as was the case with the Israelis on the Golan: in manpower 1:8 to 1:10, in tanks 1:6, in artillery 1:30 and in antitank weapons almost 1:90. When comparing the numbers of combat aircraft and trained pilots, the forces were nearly equivalent in size. This does not tell the whole story, however, because Israel had to divide her Air Force between two fronts, and simultaneously support both ground forces and strike against air defence targets. The Bar Lev Line, on which both operational plans

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[581] Gawrych (1996), p. 16 and Loefstedt, p. 9.

[582] Rothenberg, p. 180, Gawrych, George W: Combat Engineering, Egyptian Engineers in the Crossing Operation of 1973, Spiller, Roger J. (General Editor): Combined Arms in Battle since 1939, U.S. Army Command and General Staff College Press, Fort Leavenworth, Kansas 1992, p. 45 and Adan, p. 57.

[583] Adan, p. 58 and Gawrych (1996), p 18.

rested, was too weak to even channel the Egyptian attack. Besides, about half of the strongholds had been closed before the war. Therefore when the war started, only 16 strongholds were manned by no more than about 450 men, less than a battalion, from the Jerusalem Infantry Brigade. They had little or no combat experience. In addition, none of the three brigades were deployed according to the "*Dovecote*" plan, a failure that Chief of Staff General Elazar only became aware of after the war according to Gawrych. The strengths, orders of battle and losses of the Yom Kippur War can be seen in Appendix 17. A map of the operations on the Sinai front during the Yom Kippur War can be seen in Appendix 19.[584]

11.3.2. Containment – the weaknesses of "defensive defence" are revealed

Egypt also surprised the Israelis, although there was also a premonition of the coming war at the operational level in the Sinai Division headquarters. According to Schiff, at least Major General Albert Mendler, commander of the Sinai Division, had a premonition of the coming war – like Colonel Ben-Gal on the Golan front – and demanded that the Southern Command give him permission to deploy his armoured brigades according to the "*Dovecote*" plan. He was rebuffed. Finally, on 6 October, just a short time before the start of hostilities, Mendler was authorised to move at 16.00, two hours before the expected invasion hour. However by then, this decision was too late because the main bulk of the Sinai Division was still, on average, 100 kilometres away from the Canal.[585]

The short but very intense air force and artillery barrage, lasting 25 minutes, did not give the Israelis time to recover from their shock, unlike on the Golan Heights where the preparatory bombardment lasted twice as long.[586] Therefore, the loss of advance warning at a tactical level meant that the Southern Command did not have a possibility of getting a picture of what was going on – not to mention having an idea of Egypt's intentions and centre of gravity. The Southern Command was also not capable of concentrating its

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[584] Cordesman & Wagner, p. 24, Dayan (1976), p. 387, Gawrych (1996), p. 32 – 33, Adan, p. 57 and Rothenberg, p. 180.

See also Schiff (October Earthquake), p. 134.
According to Schiff, nine of the 16 manned strongholds fell or surrendered; most during the first days and the last after a week. The Israelis were able to evacuate six strongholds and the remaining one, on the Mediterranean coast, was held to the end of the war.

[585] Schiff (October Earthquake), p. 20 – 21, Williams (1989), p. 204, Gawrych (1996), p. 32 – 33 and Sharon, p. 294.

According to Williams, Mendler's tanks were ordered to remain in their normal positions to avoid any indication of major preparations.

[586] Asher & Hammel, p. 85 – 86.

See also Luttwak & Horowitz, p. 344.
According to the authors, the air attack succeeded – not only in cutting the communications of the Bar Lev Line bunkers to the rear – but also in destroying most of the long-range guns that were supposed to provide fire support for the strongholds.

forces to deal with the Egyptians when they were most vulnerable before the consolidation of the bridgeheads.

The conquest of the Bar Lev Line fortresses was secondary to Egypt's plan and therefore only a few men attacked the strongholds. The primary objective was to get a foothold in the Sinai. The Israeli counter-measures were scattered. Edgar O'Ballance, who among other sources interviewed several Israeli officers in his book *No Victor, No Vanquished*, says that there was not one, but several Israeli armies in the Sinai in the first two or three days; i.e., various units charged around the desert without any control or co-ordination. Unsupported tank battalions were thrown piece-meal into battles like cavalry charges, as Herzog puts it.[587]

The description above quite accurately interprets the situation on the east bank of the Suez Canal during the first days of the war. The principle of not surrendering territory to the Egyptians, as well as the tendency to cling to the "*Dovecote*" plan, led to attempts to reach the Canal line, but these attempts were not concentrated. In addition, the time for this had passed. The chaotic situation also reveals that operational intelligence had failed badly, partly because the Egyptians attacked on a broad front and partly because the Southern Command failed to combine the crumbs of tactical intelligence information at its disposal. As a consequence, the situation denied the IDF the ability to concentrate on any one major Egyptian threat. In addition, the construction of the air defence network along the western banks of the Canal had effectively prevented aerial intelligence since the War of Attrition.[588] The failures were also partly consequences of a lack of trust in the spot reports of subordinates, which for its part shows that the Israelis still did not believe in an all-out war at the operational level in this phase.

According to van Creveld, the IDF could easily have afforded to let the Egyptians advance until they were beyond the range of their antiaircraft missiles. The Sinai offered enough room for manoeuvre and, in addition, the Israelis also had fortifications and ramparts for tanks in its depths. However, this would have meant abandoning the Bar Lev Line, which ran counter to Israeli strategy and was also against the principle of not leaving IDF soldiers in enemy hands. The picture of the situation was, however, unclear in the Southern Command. Therefore on 6 October, though not directly attributable to Egyptian actions, the Israelis still contributed to the magnitude of their initial failure with their piecemeal counter-attacks towards the Bar Lev Line. According to Schiff, General Mendler was even given an order to prepare for a Canal crossing. By morning on the second day, 7 October, some 80,000 Egyptians and 500 tanks had crossed the Suez Canal and ten heavy bridges

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[587] Schiff (October Earthquake), p. 69, O'Ballance (1997), p. 86 and 349 – 350 and Herzog (1975), p. 191.

According to O'Ballance, individual Israeli soldiers also spoke of conflicting orders later after the war, and of a lack of liaison and accord between the political and military leaders as well as of administrative confusion; and of arms, equipment and ammunition shortage.

[588] Loefstedt, p. 13 and Morris, p. 21 – 22.

were operational for further crossings. The initiative was totally in Egyptian hands. The Sinai Division had lost 2/3 of its strength by this time.[589]

On 7 October, General Headquarters gave General Gonen permission to evacuate those forward strongholds that were accessible, and to conduct a tactical withdrawal to a more defensible line despite the opinions of the commanders of the reserve divisions that were just about to arrive at the front. According to O'Ballance, all three divisional commanders – this also includes the commander of the Sinai Division – favoured smashing through the Egyptians, seizing some bridges and crossing the Canal before the bridgeheads could be strengthened and stabilised. This illustrates the offensive spirit at the operational level. General Gonen obeyed General Headquarters' will and deployed his forces on the so-called Lateral Road some 20 miles east of the Suez Canal, leaving only a screen on the Artillery Road. However according to Schiff, nobody mentioned the word "retreat". This was totally unknown to the Israelis since the early days of the War of Independence and was also highly suspect by the fighting morale of the IDF; therefore the operative word was "regrouping". Zeev Schiff calls the tactics that Gonen adopted by the name of "no retreat and no counter-attack", meaning that the Sinai Division tried to gain time without loosing territory before the arrival of the reserves. In practise, the existing forces stepped back and forward, withdrawing and assaulting the same hills. These tactics showed not only the strategic unwillingness to abandon terrain to the Egyptians, but also a neglect of the possibilities that the depth of the Sinai would have offered for tactical solutions.[590]

The first of the reserve armoured divisions reached the Sinai passes only 24 hours from the beginning of the mobilisation. Without taking into account certain shortages in the organisations and equipment of these divisions, the pace of the mobilisation and the following deployment also showed excellent flexibility in the Sinai. Not even the Egyptian heliborne commandos, which

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[589] van Creveld (1996), p. 225, Morris, p. 23, Schiff (October Earthquake), p. 70, 101- 102 and 105, Herzog (1975), p. 181 and Sharon, p. 295.

According to Schiff, the lack of artillery and mortars was a hard fact from the beginning of the war. Obviously the knowledge of how to use artillery had also weakened.
See also O'Ballance (1997), p. 91.
According to O'Ballance, fierce and speedy armoured attacks continued during the first night, but they were piecemeal. The Israelis made fourteen such attacks but each was of company strength, and all were repulsed.

[590] Williams (1989), p. 209, Schiff (October Earthquake), p. 79 and 113, van Creveld (1985), p. 207 and O'Ballance (1997), p. 99.

See also Schiff (October Earthquake), p. 91 and 148.
Schiff sheds light on the problems that Gonen encountered. Defence Minister Dayan gave Gonen "a ministerial advice" to withdraw on the afternoon of 7 October. Gonen had to fit this suggestion in with Elazar's plans. This reveals the irregularities in the relationship between the Minister of Defence and the Chief of Staff. Elazar was also in a difficult situation with Dayan's advice, which caused confusion several times during the war. Although Elazar usually kept his own council, his subordinates were in trouble when they tried to solve which orders were the real ones. In a way, this also aggravated the already bad chain of command in the Southern Command. Besides, Dayan spent, as in the Sinai Campaign of 1956, most of his time in the field; unattainable to the command net. Therefore, contradicting orders were difficult to resolve.

were sent in dozens of helicopters to block the Israeli deployment, were able to prevent the rush of reserve divisions to the front, though they caused several delays. In addition, only the possibility of the threat made the Israelis cautious. In a way, it seems amazing that the Egyptian Air Force made virtually no effort to interfere with the Israeli lines of communication in this phase. It is obvious that this inactivity was a result of the Egyptian calculations that their air force couldn't challenge the IAF. The air defence umbrella gave enough cover to the bridgeheads. Nevertheless, the passivity of the Egyptian Air Force left the helicopters without fighter cover, with disastrous results.[591]

However with the additional divisions in the vicinity of the passes, the situation from the Israeli point of view was no longer desperate, although it was grave. The depth of the Sinai gave the Israelis – at least in theory – room for operational manoeuvre. However, the picture of the situation was still too optimistic in this phase. According to Gawrych, the IDF had begun the transition from the "*Dovecote*" plan to "*Rock*" in this phase. Because the Egyptians had already established their bridgeheads on the Sinai side of the Canal, this change was, however, no longer realistic. Both Adan and Sharon reveal that the picture of the situation made it impossible to know how to best deploy the reserves. Nevertheless, offensive means can be seen in their plans on how to counter-attack.[592]

11.3.3. Counter-strikes – inadequate combined-arms efforts materialise

The first concentrated Israeli counter-attacks in the Sinai were implemented during 8 October. This day is not highly regarded in the Israeli art of war and it

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[591] Williams (1989), p. 209, Schiff (October Earthquake), p. 60 and 79, Gawrych (1996), p. 37 – 38, Loefstedt, p. 16, Adan, p. 14 and 24 and Sharon, p. 293.

The spearheads of the Israeli reserve divisions reached the passes 17 hours after the call-up.

According to Schiff, the Egyptian commando operation was a bold one, but the results were slight. Without air cover, the helicopters were easy prey. Therefore, the attempt to block the Israelis before they reached the battlefield was the most expensive part of Egypt's offensive. Schiff estimates that the Egyptian Army had 20 commando battalions at the time. How many of them were used during the war remains unclear.

According to Adan, the Southern Command and also the General Headquarters did not believe their subordinates' reports of the extent of the commando landings at first.

See also Aker, p. 31, Cohen, p. 342 and O'Ballance (1997), p. 89 – 90.

Cohen mentions that the Egyptians landed five commando regiments, some 1,700 soldiers in 72 helicopters, in the first two days. Correspondingly, according to Aker, the Egyptians dropped some 2,000 commandos in the Sinai. Despite the fact that almost 50 helicopters were shot down, most of the commandos returned to their lines, missions – causing delays to the Israeli force concentrations – accomplished. The Syrians were much more cautious in their landings, obviously because the IAF's focus was on the Golan during the early days of the war.

According to O'Ballance, the Egyptian commando battalions, formed in 1961, were modelled on the American Green Berets. A platoon consisted of about twenty-four men – which was the maximum load of a Mi-8 helicopter. Three platoons formed a company, and three companies a battalion. A "group" could consist of one or more battalions.

[592] Gawrych (1996), p. 41, Adan, p. 33 and Sharon, p. 293.

contains a lot of items that are still occasionally the subjects of heated disputes. Nevertheless, in general it can be said that the IDF failed in two big areas. First, the command and leadership system at the operational level did not work according to the principles that were adopted in the doctrine. This was a reason for the fact that the Israelis, instead of concentrating, dispersed their forces. Second, it was revealed that the organisational development after the Six Day War had not gone in accordance with the tactical and operational principles and plans. The most severe problem was the inability to cope with the antitank and antiaircraft defences.[593]

In the war conference that was held on the evening of 7 October at the Southern Command command post, it was decided that a limited counter-attack would be launched on the morning of 8 October. However, battles of attrition were to be avoided. The main reason for the scale of the counter-attack was the simultaneous operations on the Golan Heights. According to Gawrych and van Creveld, this deviated from the Israeli strategic principle of avoiding multi-front offensives; in this case on the Golan Heights and in the Sinai.[594] However, General Elazar's approval of a limited counter-strike in the Sinai shows that the main emphasis was put on the Golan battles, which illustrates the aim of avoiding simultaneous multi-front offensives. Therefore, the role of the offensive action in the Sinai can be seen in the light of trying to keep the initiative in Israeli hands. As a matter of fact, Elazar acted exactly according to the strategic principles by doing so.

The aim of the Israeli counter-strike was to push the bridgeheads out of the area between the Lexicon Road – a field road that went parallel to the Canal in the vicinity of the banks – and the Artillery Road with a two-division flanking manoeuvre. However the Canal line was to be avoided because of the Egyptian antitank defence. The operational area was divided into three divisional sectors: the battered Sinai Division got responsibility for the easiest southern sector while the fresh armoured divisions of Generals Adan and Sharon divided the operational area in the Canal sector, Adan's division in the north and Sharon's in the central sector.[595]

However, the rest of the planning and implementation went wrong from the very beginning. Because of the over-optimistic picture of the situation, the Southern Command changed the missions of the attacking divisions several times before and during the offensive. Major changes dealt with the linking up with the strongholds and preparations for crossing, which all were in contradiction with General Elazar's general outlines. The reasons for these changes have not been published yet – if they even exist – but it can still be

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[593] O'Ballance (1997), p. 105 and 178.

Mohammed Heikal writes that U.S. Secretary of State Henry Kissinger told him that the Americans thought that the Israelis would be in a position to deliver a devastating counter-attack against the Egyptian forces in the Sinai within 48 hours of the opening of hostilities. As a matter of fact, the Israelis were able to concentrate two armoured divisions in the Sinai at this time, but a devastating counter-offensive was not possible. Both Generals Adan and Sharon also admit this.

[594] Gawrych (1996), p. 41 – 42 and 54 and van Creveld (1985), p. 211.

[595] Gawrych (1996), p. 41 – 42 and 44 and Williams (1989), p. 209.

supposed that the over-optimistic assessment made General Gonen seek possibilities for crossing the Canal already in this phase of the war. In addition, orders were transmitted over the radio net, which caused misunderstandings that still remain unclear. The counter-attacks in the Sinai were poorly co-ordinated and failed to achieve their objectives as a consequence. So, instead of implementing a concentrated flanking manoeuvre Adan's leading brigade passed – in several cases only in platoon-size combinations – in front of the Egyptian line, while the other two brigades also met a massive ambush of antitank weapons. Finally, the remnants of Adan's division were forced to withdraw. In addition, changes in Sharon's mission sent him south instead of concentrating even those armoured forces that were already available for the counter-attack. This move also left a critical junction for further Israeli operations in Egyptian hands. The Israelis later had to open the passage to the Canal by force. On the whole, the tendency of instinctively acting offensively without the bare necessities to push through enemy lines and in a piece-meal fashion – including the Sinai Division's rushes to the Bar Lev Line at the beginning of the war – greatly served Egypt's strategy of causing the Israelis as many losses as possible. This is nicely illustrated in van Creveld's phrase "How Adan could expect to stay out of range and rescue the *maozim* – let alone expect to cross the canal – remains a mystery."[596]

Afterwards, plenty of researchers have – with the wisdom of hindsight – criticised the IDF's operational principles in the Sinai during the containment and counter-strike phases. The core of these ideas can be crystallised in Luttwak's and Horowitz's statement that the Israelis missed the opportunity for a much more conclusive victory when they didn't allow the Egyptians to advance as deep as they wanted. However, this opinion does not take the Egyptian limited war concept into account; originally the Egyptians did not plan to advance into the depths of the Sinai. This makes statements like Luttwak's and Horowitz's inconsistent. Second, the Israelis also had, in theory, the possibility of fighting in depth in the Sinai and preparations – including roads, fortifications and firing ramps – and plans were made for this possibility. According to General Adan, at the operational level the enemy was to be destroyed in chosen killing zones with the reserve armoured divisions using the principles of mobile defence. This was not the decision that was taken. The strategy of not abandoning the Bar Lev Line made the possibility of using mobile defence in depth in the Sinai irrelevant. However, this decision was not made at the operational level.[597]

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[596] Gawrych (1996), p. 50, van Creveld (1985), p. 213 – 217 and 225 – 226, van Creveld (1998), p. 227, Adan, p. 107 – 108, 111, 115 – 116 and 190 and Aker, p. 39.

Adan also writes that reports of positive results by armoured reconnaissance could have misled Gonen. It was not rare for armoured reconnaissance units to push through enemy lines.

[597] Luttwak & Horowitz, p. 377 – 378, Adan, p. 46 and interview of Major General (ret.) Avraham Adan.

11.3.4. Holding phase – defence precedes offence

After the failed counter-attacks on 8 October, IDF troops held a line that run approximately along the Artillery Road. However, the Egyptians had been able to gain access to several important strongholds in the central sector, which later delayed the Israeli counter-offensive over the Canal. On 9 October, it was also decided, as a consequence of the command and operational problems, that ex-Chief of Staff Lieutenant General (ret.) Haim Bar Lev would go to the Southern Command as the Chief of Staff's personal representative. To camouflage this move, five other retired generals were recalled to service and also attached to Elazar's staff as advisers. In practise, Bar Lev became the acting OC of the Southern Command while Gonen became his deputy.[598]

According to O'Ballance, the Israelis had three choices after the failure of the first concentrated counter-attack: the first was to launch a major offensive against the Egyptian bridgeheads, the second was to make another concentrated effort to cross the Canal at a single point and the third was to wait until the Egyptians advanced and meet them in the open desert and finally beat them at mobile warfare. At the strategic level, Bar Lev and Elazar opted for the third choice: to delay any further offensives while organising their own forces and waiting until the bulk of the Egyptian armour had crossed the Canal. They would then permit the Egyptians to attack first and in this way try to balance the force ratio before crossing the Canal. General Adan also shared this view; the losses during the first days of fighting and the time that was needed to increase Israeli strength were the main reasons to wait, but the idea of a counter-offensive was in the background the whole time.[599]

At the operational level, the Israelis applied the principles of mobile defence during the holding phase. This phase saw only tactical battles. The withdrawal to the Artillery Road was not, according to Adan, planned beforehand. In addition, although *taozim*s were constructed in the depths of the Sinai, according to Adan, the net did not extend up to the Artillery Road. The existing *taozim*s were mostly unmanned as well because of the lack of infantry. Therefore, the idea was, according to Elazar, to move around during the next few days. However, this was not carried out exactly according to the principles of mobile defence. Because of the shortage of infantry and APCs, the Israelis were forced to use their tanks in mobile defence, but not in depth. In this method of fighting, which Adan calls "tank-defence", tanks moved around on the battlefield left and right, but not in depth. In this concept, the little infantry

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[598] Gawrych (1996), p. 50 and 55, Schiff (October Earthquake), p. 155 and Aker, p. 93 and 96.

According to Aker, Gonen had studied armoured tactics at the Staff College in Camberley, England before the Six Day War. He was well known for his good performance as the commander of the 7th Armoured Brigade during the Six Day War. It seems, however, that he did not have the ability to rise above this level.

[599] O'Ballance (1997), p. 112, Luttwak & Horowitz, p. 377 – 378, van Creveld (1985), p. 208, van Creveld (1998), p. 229 and interview of Major General (ret.) Avraham Adan.

that was available was used to give cover to the tanks; mostly at night however.[600]

However, the decision to temporarily deploy defensively was not accepted unanimously. During the counter-attack, Sharon's division had uncovered an unmanned gap between the two Egyptian armies, and to him this was a possibility to take the initiative. However, despite Sharon's protests, the supreme command chose to wait. The more threatened Golan took first priority. Sharon, nevertheless, violated Elazar's concept of avoiding attrition and made a number of counter-attacks on 9 October to gain control of the *taozim*s held by the Egyptians and make his way to the Canal. This was all in vain, leading only to Israeli losses. Adan estimates that on 9 October the principle of concentrating force overrode initiative. It was calculated that the Southern Command did not have enough force yet for both a crossing and a holding action in the Sinai. In addition, according to Adan, the Israelis did not yet have bridging equipment on the front. Although the Israelis would have been able to capture some Egyptian bridges, they would not have been enough to increase the strength in the bridgehead. Therefore, as a matter of fact, the Israelis would have lost the advantage of surprise by acting according to Sharon's view.[601]

The decision to wait for the Egyptian move also reveals several other interesting details. First, it shows that Israel did not have enough forces for simultaneous wars on two or more fronts; this principle was wisely written into the IDF doctrine. The most crucial element was the Air Force. The transfer of ground forces from the Golan front was not so important for balancing the force ratio, it might not even have been possible to a large extent. This balance was to be achieved by allowing the Egyptians to attack first. In mobile warfare, the Israelis expected to be superior to the Egyptians, and they were not wrong; especially when they also had the advantage of being in a defensive posture. Third, the decision also reveals that the final aim of the war was still a decisive victory, which was to be achieved with an over-all offensive across the Canal into the Egyptian rear.

On 14 October, the Egyptians started their offensive from the bridgeheads towards the Sinai passes. Loefstedt and Barclay estimate that with the operational pause after the consolidation of the Egyptian bridgeheads, the initiative quickly passed over to the Israelis - culminating in the disastrous attack toward the passes. Once the initial plan had run its course, the Egyptians lacked the flexibility to exploit their successes. The decision to continue was not made unanimously by Egypt's General Staff. It meant moving out from under the air defence umbrella into mobile warfare; i.e., to those parts of the military art where the Israelis were strong and the Egyptians were weak. Nevertheless, the decision was made, although mainly for political reasons to draw Israel's attention away from the Golan front. This operation was hoped

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[600] Interview of Major General (ret.) Avraham Adan and van Creveld (1985), p. 208.

[601] Interview of Major General (ret.) Avraham Adan and Gawrych (1996), p. 54 – 55.
According to Gawrych, Gonen's inability to control Sharon was the final reason for sending Bar Lev to the Southern Command. However, the decision to not dismiss Sharon rather shows that Elazar appreciated Sharon's command abilities more than he disliked his disobedience.

for on the Israeli side, although the Israelis feared, according to Adan, that the Egyptians would push slowly forward on a broad front; taking their air-defence network with them. This did not happen, however. The Egyptians started a deep penetration, which gave the Israelis the advantage. Once they recovered from their first shocks, the Israelis showed a degree of flexibility. Therefore, 14 October is, quite rightly, generally seen as the turning point of the war. The Egyptians lost the operational initiative in this phase and were put on the defensive from then up to the end of the war.[602]

Egyptian tactics in mobile warfare had not developed significantly since the 1960s, but some changes had been made. Frank Aker describes this in his book *October 1973. The Arab-Israeli War*. Egyptian infantry was trained to move toward an objective in co-ordination with the fire support of tanks. In theory this followed the combined arms principle. The personnel carriers spearheading the attack stood, however, little chance against Israeli tanks that acted flexibly in platoons or companies, concentrating their fire on the personnel vehicles. Thus when a vehicle was damaged, survivors had to flee on foot through the field of fire. In addition, tanks still moved in rigid column formations and were therefore very vulnerable to Israeli ambushes. When the tanks were disabled, the APCs also had few possibilities of continuing their thrust. On this one day, the Egyptians lost some 250 damaged or wrecked tanks, and the number of destroyed APCs was yet greater. This was a serious blow to the Egyptians and balanced the force ratio between the Israelis and the Egyptians. This made the Israeli crossing of the Suez Canal possible.[603]

11.3.5. Counter-offensive – a continuation of "Constant Flow"

O'Ballance states that an Israeli plan for crossing the Suez Canal had been in existence since 1968. This coincides with the Southern Command plans during the War of Attrition. This plan, known as "Operation *Gazelle*", envisaged a crossing at one of three points; near Kantara, near Deversoir, or just north of Port Suez. According to Katz, during General Sharon's tenure as OC Southern Command this plan was revised and renamed "*Abirey Lev*" (*Stout Heart*). Concrete preparations for accessing the Canal line were also made then.[604]

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[602] Loefstedt, p. 13, Barclay, 46, Gawrych (1996), p. 56 – 57, interview of Major General (ret.) Avraham Adan, Aker, p. 100 and O'Ballance (1997), p. 246.

See also Dupuy (1975), p. 54.

According to Dupuy, General Shazly urged General Ismail to take advantage of the early successes during the first days of the war and continue the thrust to seize the Sinai passes. Ismail did not agree because he did not want to throw away the possibility of a defensive victory. At the time, the Egyptians quite realistically estimated that they had rather small chances against the Israelis in mobile warfare.

There is no evidence that the 14 October operation had any significant effect on the Syrian front.

[603] Aker, p. 30, O'Ballance, p. 161 and Schiff (October Earthquake), p. 213 – 214.

[604] O'Ballance (1997), p. 153 and Katz (1989), p. 124 – 125.

See also Rothenberg, p. 193 – 195 and Gawrych (1996), p. 59.

As early as 9 October, the Southern Command started to revise its crossing plans. Repeated frontal attacks to dislodge the bridgeheads were seen as too exhausting, maybe even impossible. Therefore, the only real option for throwing the Egyptians off balance was a crossing operation into the Egyptian lines of communication on the western side of the Suez Canal. In mobile operations, the Israelis had a possibility for a partial victory that would have shortened the war. In addition, a thrust to the west bank of the Canal made it possible to punch holes in the air defence network, which later on would have allowed the IAF to gain partial air supremacy, which was an important part of the IDF's deep penetration concept.[605]

Zeev Schiff states that the lack of tactical reserves – which can be interpreted as being operational when the Israeli definitions of the military art at the time are recalled – forced the Israelis to concentrate their efforts on a single bridgehead. It is obvious that there also were other reasons for this decision, although the principle of concentrated effort played a central role, especially after the failed piece-meal attacks of the early days of the war. General Sharon's forces had uncovered the seam between the two Egyptian armies on the bridgehead. This was an opportunity for the Israelis. Coincidentally, this choice happened to coincide with the Southern Command plan. In addition, the Great Bitter Lake offered a protected southern flank to the operation. On the night of 14/15 October, Chief of Staff Elazar got the approval of the "War Cabinet" for the crossing.[606]

Before the operation, the Southern Command re-organised its troops into two elements. Already on 9 October the responsibilities of the Southern Command were divided in two: a new command called Southern Sinai District was made responsible for the defence of the more peaceful southern part of the Sinai south of the Suez Canal under the command of Major General (ret.) Gavish. The second defensive division under the command of Brigadier Sassoon was made responsible for the northern part of the Sinai. This freed the Sinai Division, commanded after the death of General Mendler by Brigadier Kalman Magen, for a crossing. In addition, a part of the Sinai Division was detached to a third defensively deployed division on the eastern bank of the Canal under the command of Colonel Israel Granit. Thus, before the crossing the defensive elements consisted of a strength of about three divisions, obviously with older armament and equipment. The crossing force consisted of the three already committed armoured divisions of Adan, Sharon and Magen,

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Rothenberg also calls the crossing plan in the Yom Kippur War by the name of "*Gazelle*" while Gawrych names it "*Stout-hearted men*". According to Rothenberg, the plan was drawn up in 1971.

[605] Rothenberg, p. 193 – 194.

[606] Schiff (October Earthquake), p. 182, O'Ballance (1997), p. 222, Barclay, p. 47 and Gawrych (1996), p. 59.

According to O'Ballance, an American *SR-71* reconnaissance aircraft still confirmed on 13 October that there was a large area about 40 kilometres in width that was devoid of troops on both sides of the Canal south of Ismailia and the Great Bitter Lake, i.e., in the planned crossing site,.

O'Ballance also mentions that a number of Arabic-speaking intelligence groups from *Sayeret Matkal* had crossed the Canal already from 12 October onwards to gather information without arousing suspicion.

which were reinforced with additional brigades and infantry battalions, hastily assembled to give cover from the Egyptian antitank teams. This arrangement enabled the Southern Command to concentrate on the crossing and created a clear centre of gravity for the forces in the penetration. In other words, the Southern Command formed a mobile group to exploit success in the offensive. In addition, the defensive divisions formed the operational reserve of the Southern Command, while they were also able to put pressure on the Egyptian bridgeheads. On the whole, this division of force can also be seen as the seed in the background of the organisations and missions of the army corps command that were established in the IDF after the war.[607]

According to Schiff, the objective of the crossing operation was not to seize territory, but to break the Egyptian army. This coincides with Israeli doctrine and also with manoeuvre warfare theory. First and foremost, the Israelis aimed at pushing the Egyptians off balance by threatening mobile operations in their vulnerable rear areas – including finally also the threat that the deep penetration presented to the capital city of Cairo. Dupuy also presents another aim; to disrupt the Egyptian air defence network to enable the IAF to provide support.[608]

The Israeli operational plan for the crossing was as follows: Sharon's division would open the road to the Canal, take the bridgehead and secure the crossing site on both sides of the Canal. Adan's division would then cross over, destroy the Egyptian air defence system to allow the IAF to provide support, and finally turn south and encircle the southern Egyptian Army. Finally, Magen's division would also cross the Canal and relieve Sharon to secure the access to the Canal. While the overall plan was carried out in broad outline as planned, it took several more days then the two days that were planned for. Two things delayed the implementation in the early phases of the operation. First, the Egyptians had a tight grip on an area called the "Chinese Farm" and this area was the only route to get the bridging equipment to the shore. Therefore, the Israelis had to open a road, called the Akavish Road, by force against a fortified enemy with heavy losses. Although Sharon was able to fight his way to the crossing site with his encirclement and cover operation, and take the bridgehead on the night of 16 October, the opening of the road for the bridges caused a one-day delay in the crossing, which was finally started on the night of 16/17 October. Second, the Egyptian pressure against the route to the crossing site made the supreme echelons of the IDF cautious because of a fear of being cut off, and so in itself a successful initial crossing was not

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[607] O'Ballance, p. 151 – 153 and 224, Dupuy (1992), p. 612, Adan p. 188, 255, and 327 – 328, Gissin, p. 346 and 348 and van Creveld (1998), p. 234.

The divisions that were committed to the crossing consisted of four to five brigades; i.e., the actual strength of the crossing force was equivalent to four divisions.

Bellamy defines a mobile group as "an element of an army or front's forces designed to exploit success in the offensive." See Bellamy, p. 125.

[608] Schiff (October Earthquake), p. 264 and Dupuy (1975), p. 54.

continually followed through on. This gave the surprised Egyptians time to recover and start to organise their defence west of the Canal.[609]

The decision not to continue the offensive after taking the initial bridgehead has also been a reason for heated disputes after the war. After Sharon's crossing, the Southern Command and General Headquarters gave orders to cease all crossing activities. This was a consequence of the difficulties in opening the Akavish Road to the crossing site for the pre-constructed bridges as well as of keeping it open for supplies. From Sharon's viewpoint, the decision not to continue was a waste of the use of success, as he says in his autobiography: "Rather than exploiting surprise we were forced to wait." At this time, however, Sharon's attention was already on the west bank of the Canal. This aggravated the situation on the east bank. Therefore, Adan's forces were also committed to keep open the access to the Canal. In this situation, Sharon suggested that the plan be changed to let him continue while Adan kept the corridor open. However, changes were not made. The danger of being cut off by increasing the force in the bridgehead and continuing the crossing, and by taking care of supplies without the bridges did not result in an optimistic estimate of the future. In this light, the supreme command's decision to wait is understandable.[610]

It took one day and two nights for the Egyptians to realise the extent of the Israeli crossing. After that, the crossing site came under heavy artillery fire and aerial attack. It is easy to say that the Israelis lost the best possibilities provided by the initial surprise. However, the realities of the situation were as described in the previous paragraph. Christopher Bellamy estimates that if the Egyptians had launched a counterattack on the west bank at this time, there is no doubt that the Israeli forward detachment would have been wiped out. This might well have been true. Mohammed Heikal reveals that the Egyptians had a plan called "*Plan 200*" to deal with Israeli penetration of the west bank and one of the three estimated crossing places was near Deversoir, i.e., exactly where the Israelis crossed the Canal. Why the plan was not implemented remains unclear, but it seems that there were miscalculations of Israeli intentions as well as communication problems.[611]

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[609] Gawrych (1996), p. 60, 62, 65 and 72, Dupuy (1975), p. 55 and Herzog (1975), p. 220.
According to Dupuy, the Egyptians had, at the time of the Israeli crossing, one and half armoured divisions, one or two mechanised divisions, at least two reserve infantry divisions and a number of independent armoured, mechanised and infantry formations between the Suez Canal and Cairo. There are fewer forces on Gawrych's map. It is probable that there were several divisions in this area at the time. However, it is obvious that these reserve formations were not in a state of immediate readiness and were also qualitatively weaker than those divisions on the eastern side of the Canal.

[610] Sharon, p. 317 – 318 and 322, Herzog (1975), p. 227, Aker, p. 107 – 109 and Schiff (October Earthquake), p. 247 and 249.

[611] Bellamy, p. 115 and O'Ballance (1997), p. 242.
O'Ballance explains that the defence on the west bank was left to foreign troops who were only lightly armed. This does not, however, explain why news of the Israeli penetration between the two Egyptian armies on the east bank took so long time. The explanation can be found in the interpretations of the situation and in the chain of command.
See also Barclay, p. 47.

On the morning of 18 October, the Israelis were able to continue their plan. At this stage, the aim of quick and decisive victory was not, according to Gawrych, any more acute and, as a matter of fact, it took a further five days for the Israelis to push some 100 kilometres southward, encircle Suez City and cut the lines of communication of the Egyptian Third Army. Despite the fact that the Israelis were able to make a gap in the Egyptian air defence network and use the IAF, the last phase of the war was not a lightning war, as Doctor Gawrych points out. The reasons for this were many. The most important is obviously the lost momentum, during the 36 hour hesitation the Egyptians were able to at least tolerably organise their defence. Secondly, the Egyptians were more motivated and better trained in this war, especially the officer corps and were able to continue fighting, even when surrounded. Finally, the ever-lasting disputes over operational decisions in the Southern Command were apparently also sub-reasons for the delays. Pondering whether or not to continue against the lines of communications of the Egyptian Second Army in the north or the Third Army in the south caused diversions from the original plan to move south. Although the main effort was eventually made in the south, the strength used was less than originally planned and time was wasted as well. Nevertheless, on 23 October the IDF has encircled the southern Egyptian army and the next day the cease-fire became effective.[612]

The daring Canal crossing operation shows clearly that the doctrine of the IDF had not changed. In addition, it is interesting to discover how the Israeli plan coincides with the "Strategy of Indirect Approach" and the theory of manoeuvre warfare. By taking a controlled risk and by allowing the Egyptians to attack first, the Israelis "moved the giant", i.e., they forced the Egyptians out from under their air defence umbrella into mobile warfare, where the Israelis excelled and their opponents did not. This phase was then followed by a deep thrust through the Egyptian weak point and against their vulnerable rear. In addition, at the strategic level of warfare, the aim of seeking a decisive victory also reflects the strategy of the denial approach. A military victory would have returned deterrence power to the IDF.

11.4. The Air Force in the missile era

The Israeli Air Force was prepared – according to its existing doctrine – to implement a pre-emptive air strike against enemy air bases and air-defence targets in order to gain aerial superiority, which was a prerequisite to supporting the ground forces. On the morning of 6 October, Commander-in-Chief of the Israeli Air Force, Major General Beniyamin Peled was informed by Chief of Staff, General Elazar that Syria and Egypt intended to attack at sunset on the same day. After a short discussion it was decided that the IAF should prepare a pre-emptive strike against the Syrian missile batteries at noon. This was, according to Cohen, a deviation from the existing "Scratch" plan, which gave priority to the Egyptian front. The new plan was also, however, cancelled

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According to Barclay, the Egyptians considered the initial Israeli crossing nothing more than a hit-and-run commando-type raid, like the Israelis had implemented during the War of Attrition.

[612] Gawrych (1996), p. 65 and 68 and Schiff (October Earthquake), p. 258.

for political reasons and the IAF was ordered to engage in intercept missions. This quick change caused confusion in the IAF staff and squadrons, and delays in the implementation because of the need to re-arm the planes for the new tasks. The doctrinal demand of aerial supremacy as a backdrop for mobile ground operations – the main task of the IAF – became a dead letter until the counter-offensive phase and even then the IAF only partly dominated the skies.[613]

The Egyptian and Syrian plans for their air forces and air defence systems were defensive – excluding the initial aerial bombardments and several occasional minor strikes later during the war. The reluctance to commit their air forces in full was obviously derived from the experiences of the past wars. Israel's superiority in the air was acknowledged. Because of this, the Israeli air defence was not severely tested during the war. Therefore, knowing their deficiencies and the Israeli tendency to use their air force as "flying artillery", the Arabs made, according to General Ghazala, a decision to challenge the IAF with a massive ground-based air defence network that could give cover to ground operations and deny the Israelis reconnaissance flights. This overall decision was a realistic one, it aimed to cause the IAF loss of life and planes that would have been unacceptable to Israel, as Doctor Gissin writes. However, the trust in land-based air defence restricted the use of their own air forces as well. Missions had to be planned beforehand and while this shortcoming was not a decisive one because of the adopted doctrine, both the

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[613] Dougherty, Stanley J: Defense Suppression. Building Some Operational Concepts, School of Advanced Airpower Studies, Air University Press, Alabama 1992, p. 14, Williams (1989), p. 117 and Cohen, p. 322, 352 – 354 and 358.

According to Cohen, weather conditions were also unfavourable for the pre-emptive air strike, but obviously this was not a decisive factor behind the decision against the air-strike. In addition, the IAF lacked knowledge of the precise locations of Arab missile batteries. This also shows the belief that a war was not very probable.

See also Aker, p. 48, O'Ballance (1997), p. 289 – 290 and Rubinstein & Murray, p. 128 – 129.

Aker states, that the Egyptian aircraft were hidden underground or in combat-ready concrete hangars to avoid an open invitation to destruction by the IAF. Destruction similar to that of 1967 was therefore impossible. This was known within the IAF and was obviously one reason to refrain from using the pre-emptive air strike.

Rubinstein and Murray state that after the war both Benyamin Peled and Ezer Weizman criticised the decision to cancel the original plans. They both preferred air defence suppression operations and in this context knocking out the missiles should have been given a higher priority.

According to O'Ballance, President Sadat said in an interview with The Times, 4 June 1976 that: "Israel has air supremacy, not superiority, it is true", which can be interpreted as saying that the IAF didn't dominate the skies during the Yom Kippur War.

Egyptian and the Syrian air-defences made many friendly kills during the war.[614]

The Egyptian missile batteries were placed in a mosaic – like the North Vietnamese system around Hanoi during the Vietnam War – in the area of the west bank of the Suez Canal to offer mutual defence. This network was complemented with hundreds of anti-aircraft guns. The *Sa-2*s launchers, effective at medium and high altitude, were protected by *Sa-3*s, which were effective at low and medium altitude. Anti-aircraft artillery reinforced this network by giving cover against hedgehop bombing. This concept gave cover at all flight altitudes and extended up to 30 kilometres into the depth of the Sinai. It fulfilled its requirement to support the bridgeheads well. In addition, this stable network on the west bank was intended to be reinforced with mobile *Sa-6*s and *Sa-7*s that were supposed to be placed in the bridgeheads, including mobile radar to detect incoming flights. The Israelis had experience with the *Sa-2* and *Sa-3* missiles from the War of Attrition and the existence of the *Sa-6*s and *Sa-7*s was also known, but the effectiveness of the *Sa-6*s, and the large number of *Sa-7*s, plus the jamming resistance of the new radar systems were not.[615]

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[614] Rodwell, Robert R: The Mideast War: "A Damned Close-run Thing", Selected Readings on the Yom Kippur War, United States Army, Institute for Military Assistance, August 1975, p. 68 (original text in Air Force Magazine in February 1974), Ghazala, Mohamed Abdel Halim Abou: The Suez Crossing, an interview with Major General Mohamed Abdel Halim Abou Ghazala, Military Review, November 1979, p. 5, Gissin, p. 100 and Cordesman & Wagner, p. 86 and 90.

General Ghazala, who commanded the artillery forces of the Egyptian Second Army during the Yom Kippur War, speaks of the Egyptian plans in the interview. Sources on the Syrian plans have not been made available. However, Syrian weapons, tactics and action during the war were similar to the Egyptians. Therefore, it can be supposed that their plans were parallel to the Egyptian ones.
According to Gissin, the possibility of downing a large number of friendly aircraft was a calculated risk that goes back to the Soviet advisers.
Cordesman and Wagner count that a total of 58 Arab planes were downed by own air defence.

[615] Schiff (October Earthquake), p. 253, Cordesman & Wagner, p. 74, Aker, p. 27 and 80 and Nikunen, Heikki ja Lappi, Ahti: Ilma-aseen käyttö ja ilmatorjunta Vietnamin ja Lähi-idän sodissa, Ilmatorjunnan vuosikirja 1975 – 1976 (The use of the Air Arm and Air Defence during the Vietnam and Middle-East Wars, the Finnish Air Defence Yearbook 1975 – 1976) p. 184 – 185 and 190.

See also O'Ballance (1997), p. 41, Dougherty, p. 14, Cohen, p. 368 and Dupuy (1992), p. 608.
According to O'Ballance, the Syrians had wanted to use their *Sa-6*s in an air battle that occurred in Syrian airspace between the Israelis and the Syrians some one month before the war. The Soviet advisers suggested avoiding this because the Israelis would have been prematurely alerted to the effectiveness of this new weapon.
According to Dougherty, the Egyptians had 63 missile batteries of 4 – 6 launchers each (25 *Sa-2*s, 20 *Sa-3*-s, 17 *Sa-6*s). Dougherty bases his numbers on a ground report of the U.S. Military Equipment Validation Team, which made a tour of Israel between 28 October – 8 November 1973. According to Cohen, the Egyptians had 70 batteries. If we use Dougherty's formula to count the batteries, the numbers shown by Dupuy are larger, as is typical of those studies made soon after the war. It seems that Dupuy and others who present larger numbers of missiles have counted all the pre-war inventories, including those deployed

The Syrian air defence system was quite similar to the Egyptian one. Nevertheless, the concept of deploying the launchers deviated slightly from the Egyptian because the fixed launchers were somewhat further from the front. According to Cohen, the front line was protected by sophisticated *Sa-6* missiles. This part of the system, reinforced with shoulder-fired *Sa-7*s and anti-aircraft guns, was mobile. The static second and third lines of *Sa-2*s and *Sa-3*s were deployed more deeply in Syrian territory. This concept, like their allies' one along the Canal line, also provided cover at all levels of the skies.[616]

Although the 1967 cease-fire lines had given the IDF and IAF more room for manoeuvre, flight distances to targets had lengthened and the supply lines that needed to be protected were much longer than before. In the Yom Kippur War, when Israel faced a two-front assault, this meant that IDF General Headquarters had to divide the IAF's strength in two, which later meant losing the advantage of concentration during the first two days of the war. Anticipating this dilemma, General Headquarters established a new system, a forward command post of the IAF under the command of the former IAF Commander-in-Chief, Major General (ret.) Mordechai Hod, in the Northern Command as early as 6 October. The main aim of this arrangement was, according to Cohen, to relieve the IAF's Main Control Centre of tactical engagement in the war, though he hints that the creation of this system was also done to pacify the ground forces. In practice, this meant that decision-making in joint operations was delegated below the General Staff level for the first time. The forward command post had the authority to use the IAF according to its needs. Experiences of the system were obviously good because, when the Golan front was stabilised, General Hod went south to establish a forward command post for the Southern Command as well.[617]

In practice, the Air Force ground support was almost all the Israelis had to help their ground forces until the mobilisation was concluded. This was a costly action and difficult to co-ordinate. According to Cordesman and Wagner, the IAF was neither trained nor had the command system to allocate sorties, analyse losses or manage air battle. Therefore, the creation of the forward command post can also be seen as coming from these problems. However, the IAF did well in the intercept missions in Israel's airspace and Israel proper was not seriously threatened after the initial air strikes. By contrast, there was no question of any aerial supremacy over the area of the front during the first days of the war and Arab air strikes were not rare. This would confirm Kahalani's account when he recalls the events of the 7 October as follows:

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inside Egypt and Syria. In addition, in some statistics the *Sa-7*s, counted in the same category, confuse these figures.

[616] Cohen, p. 351 and 387 and Nikunen & Lappi, p. 190.

The number of Syrian batteries was supposedly between 30 and 40, of which some 10 were *Sa-6*s. According to Cohen, the precise number was 31.

[617] van Creveld (1998), p. 233, Cohen, p. 326, 349 and 400 and Williams (1989), p. 117.

Cohen also mentions that Regional (air defence) Control Centres were already in existence before the war. However, they were obviously aimed more at surveillance than leading the use of airpower in wartime.

"We had always been promised that the Air Force would take care of the sky, but we hadn't seen them for two days."[618]

At noon on 7 October, the focus of the IAF was put on the Golan front, although at the time the IAF was, according to Cohen, still prepared to attack the Egyptian missiles along the Suez Canal. Van Creveld writes that at this phase – and connected to it the establishment of the IAF forward command post on the Golan – the IAF was divided in two. In the chain of command, this can be interpreted along van Creveld's lines. The forward command post took responsibility for aerial support on the Golan while the IAF staff took care of the Egyptian front. Instead, the flight capacity of the IAF was not divided, at least not fifty-fifty. In south the IAF reduced its flight intensity while the bulk of the capacity of the IAF was given to the Syrian front.[619]

The new plan, "*Dugman 5*" as Cohen calls it, was aimed at destroying the Syrian air defence missiles. The decision to switch to suppression of the air defence was made when the ground support was countered by forward air defences. The change, however, caused confusion similar to the earlier change from pre-emption to interception, maybe even more so because the locations of the Syrian missile sites were still less well known than the Egyptian ones. According to Cohen, of the 31 missile batteries only three active ones were identified and only one was destroyed while another was damaged. Six *Phantom*s were lost and the result was that no attempt to launch another all-out operation was made again during the war. However, although the decision to change the IAF's missions and the priority between the fronts has been a disputed issue since the war, in the light of statistics it is highly dubious that the IAF would had performed better using the original plans. According to van Creveld, the IAF lost almost one hundred aircraft destroyed or damaged between 6 and 9 October; i.e., more than one fifth of its pre-war strength. These numbers, originally presented by Major General Beniyamin Peled in a lecture in January 1988, show that had it been sustained the IAF would quickly have reached the point where it could no longer have been able to guarantee air superiority even over Israeli territory.[620]

Dougherty states that the shortage of electronic counter-measure (ECM) equipment – both in quantity and quality – poor tactics and improved jam resistant surface-to-air missiles contributed to the high attrition rate of the IAF.

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[618] Cordesman & Wagner, p. 92 and Kahalani (1984), p. 71.

See also Asher & Hammel, p. 82 and Schiff (October Earthquake), 57.
To compensate for the lack of forward air support controllers, the IDF used different means; for example, patrols that marked targets beforehand at night. This dangerous action was often a waste of time and illustrates well the problems in close-air-support because of the instability of the tactical battlefield.

[619] van Creveld (1998), p. 233 and Cohen, p. 352.

[620] Cohen, pp. 353 – 354 and 362, Cordesman & Wagner, p. 82, Schiff (October Earthquake), p. 48 and van Creveld (1998), pp. 240 – 241.

Cohen mentions that on the morning of 12 October, General Peled stated that the erosion rate of the IAF would reduce his ability to protect the nation's skies within several days if there was no change along the front. After some time the pilots learned to live with the Arab missiles, and the rate of losses began to decrease. At this phase, deliveries from U.S. storage made up for the plane losses.

Therefore, instead of progressing with the proper equipment, the IAF was forced to seek tactical and technical methods of tricking missile batteries, but with slight results. Because of the fear of losses – and there were plenty of those – the efficacy of the missiles forced the Israelis to fly at a very low altitude, i.e., within the range of anti-aircraft guns. This was also very costly, according to both Cordesman and Wagner and Gissin, some 40 percent of Israel's aircraft losses (of the total losses attributed to ground defences) were due to anti-aircraft artillery. Nevertheless, despite the losses quite many of the IAF's pilots shared, according to Cohen, the view that the missile network could have been completely demolished if the IAF had mobilised all its attack and airborne capabilities for two days. The losses during the first days of the war argue otherwise. At this time the technical and tactical methods, in addition to the shortage of intelligence information on the mobile missile batteries, would obviously not have been enough to neutralise the enemy ground-based air defence systems. According to Cordesman and Wagner, Israeli pilots were not trained to use ECM equipment. This was revealed in the tactics that the IAF used during the early days of the war; rather than overflying the missile sites directly, the pilots flied around the edges. This shows a mistrust in and ignorance of the equipment.[621]

Like the ground forces' commanders, their IAF colleagues were also quick to learn from their mistakes. Despite the early setbacks, General Peled continued to believe that the IAF had to continue to give priority to the Syrian front. Instead of still trying to achieve aerial supremacy, Peled now argued that interdiction; i.e., destruction of the enemy's ground forces before they could reach the battlefield, should be the IAF's primary mission. On the evening of 7 October, when larger reserve forces reached southern Golan, the method of trying to provide close support and tactical interdiction was changed. It is obvious that at this stage the possibility of threatening the Syrian southern flank by accessing the battlefield via the northern valley route had also occurred to the Israelis. This provided an opportunity to extend the battlefield into the Syrian depth, to disrupt the momentum of enemy troops that had not yet engaged in battle, to destroy the integrity of the enemy's operational scheme and to take the initiative. All this can be compared to the principal aims of manoeuvre warfare. From 7 October onwards, the IAF concentrated on interdicting the commitment of the Syrian reserves, leaving the tasks of

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[621] Dougherty, p. 14, Cordesman & Wagner, p. 74 and 83 and Gissin, p. 139 and Cohen, pp. 388 – 389.

According to Dougherty, the IAF had only 161 ECM pods and 30 radar-homing and warning sets available in 1973.

See also O'Ballance (1997), p. 289.

According to O'Ballance, the United States also had more recent ECM equipment that was not delivered to Israel. It is not known if this equipment was effective against *Sa-6*s. Neither were *Lance* ground-to-ground missiles, which would have been effective against the missile sites, in Israeli use.

offensive counter-air, close-air-support and suppression of the Syrian air defence system in second place.[622]

From 9 October onwards, during the counter-offensive, targets in the Syrian rear – airfields, power plants, oil refineries, military command posts – were included in the target lists as well. Primarily the extension of the target list resulted from Syrian launching of ground-to-ground missiles against an Israeli air base, but basically the aim was more than that. According to Cohen, the attacks were intended to carry a double message: firstly, they were to inflict a physical blow that would disrupt the Syrian war effort, at least for a while, and secondly, the message was a psychological threat. In addition to the ground forces' offensive towards Damascus, the air strikes also showed that no place on Syrian soil was out of the range of the IDF. On the whole the decision to extend the war into Syria proper was a significant one and was influential both at the operational and strategic levels of warfare. Already after two days of fighting the Israelis aimed both to undermine the opponent's strength and to lessen the Syrian long-term war capacity. In a way the strikes against the airfields also showed a return to the pursuit of aerial supremacy, at least the Syrians were forced to allocate additional aircraft to protect the airfields. In addition, the air strikes against the Syrian Central Command and Air Force Headquarters showed the application of the "Strategy of Indirect Approach". In manoeuvre warfare theory this is called dislocation. The Israelis had been able to reveal the weak point of the Syrians and concentrate their efforts on this.[623]

During the counter-offensive on the Golan front the IAF continued to attack individual missile batteries. Although the results were not decisive in terms of numbers – during the war only three batteries were destroyed and five damaged – this was a major portion of the mobile batteries that protected the Syrian ground forces and certainly influenced the ground battles. At this stage the IAF had also found tactical and technical means to avoid and destroy the missiles. The older models of surface-to-air missiles were jammed routinely with chaff from transports and helicopters. Evasive manoeuvring was also

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[622] Cohen, p. 400, O'Ballance (1997), p. 137, Dougherty, p. 15 and Gissin, pp. 418 – 419.
After the war, according to Gissin, the concept of ground support was changed. In close-air-support the IAF was to engage the targets at no closer than some five miles behind the front line. The area between this line and the front line became the responsibility of artillery.
See also Aker, p. 24 – 25 and Cohen, p. 360.
According to Aker, the Israeli pilots began to attack from over Jordanian territory, skimming in a low, northward curve, they hugged the ground contours until they burst over the Golan plateau, achieving a flanking approach to the Syrian armour and then departed toward Lebanon and the Mediterranean.

[623] Dougherty, p. 15, van Creveld (1998), pp. 240 – 241, Cohen, pp. 352 and 357 – 358 and Cordesman & Wagner, pp. 82 and 92 - 93.
The role of *Frog* ground-to-ground missiles during the war was not a decisive one.
Cordesman and Wagner state that it was more the massive integrated air defence net of older *Sa-2* and *Sa-3*s than the mobile *Sa-6*s and *ZSU-23-4*s that forced the IAF to concentrate on the suppression of the air defence in the rear areas. This also shows the still prevailing pursuit of aerial superiority.
See also O'Ballance (1997), p. 285.
According to O'Ballance, the Syrian air defence network had been placed on the Damascus Plain, leaving the rear areas open to air strikes. This eased the IAF's task. Nevertheless, according to Cohen, up to Damascus the road was full of air defence weapons.

used. The *Sa-6*s were different, but the Israelis were also able to reveal several weaknesses in this system. An American air defence specialist, William O. Staudenmaier, states that although the target indication radar of the *Sa-6* launchers was mostly immune to the chaff spread by the Israelis, at that time the *Sa-6*s were dependent on *Sa-4* long track radar for altitude discrimination and early warning information. The Soviets had not, however, delivered the latter radar to the Middle East at that time. This meant that the *Sa-6*s could be blinded at a high altitude because the weapons launch trajectory for maximum acceleration was low. The Israelis discovered this during the war and changed their approach; they began to use high and steep attack profiles to destroy the launchers. In addition, later during the war on the Egyptian front the Israelis were also able to reveal deficiencies in the frequency ranges of the *Sa-6* launchers, which used radio links for communication instead of land wires and were therefore vulnerable to electronic warfare attacks.[624]

Even during the counter-offensive on the Golan Heights, the IAF continued to interdict the Egyptians by destroying the Egyptian bridges that crossed the Suez Canal. Although this effort was, at this stage, done on a lesser scale than in the north, the IAF was capable of destroying numerous bridges, some of them dummies, but the Egyptians had the capacity to construct them over and over again. This job was also a costly action for the IAF. When the IAF's priority was transferred to the Sinai, the above mentioned deficiencies, which also existed in the Egyptian air defence network, were mostly revealed. This made several technical modifications and improvements in the IAF's tactics possible even before the suppression of the air defence began.

As on the Golan, the Israelis also used the contours of the terrain on the Egyptian front, in this case the possibility of approaching the Egyptian left flank by skimming in at sea level. On the morning following the start of the Israeli crossing, a methodical attack on the Egyptian missile batteries from Qantara to Suez began. In these repeated waves of strikes, the missile system was paralysed and on 18 October the IAF achieved, according to Schiff, aerial supremacy in the area, which obviously meant – not total aerial superiority – but aerial supremacy in the area of ground operations. According to Cohen, a total of 43 missile batteries were destroyed or damaged. In these attacks the IAF used not only conventional bombing, but also anti-radar missiles, television guided missiles and bombs plus ECM. Although this new weaponry

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[624] Cohen, p. 354, Cordesman & Wagner, pp. 83 – 84, Staudenmaier, William O: Learning from the Middle East War, An Arab Perspective of the October War, Selected Readings on the Yom Kippur War, United States Army, Institute for Military Assistance, August 1975, p. 40 (original text in Air Defense Trends in April-June 1975), Rodwell, p. 67 and Aker, p. 50.

See also Cohen, p. 390 and Coleman, Herbert J: Israeli Air Force Decisive in War, Aviation Week and Space Technology, December 3, 1973, p. 49.

Cohen states that one reason for the IAF's ability to learn to live with the missiles was two American Jewish pilots who volunteered for the IAF and provided their experience from the Vietnam War. No information on other foreign volunteer pilots has ever been revealed, despite hints. Rather, American pilots flew plane reinforcements to Israel, but they had no role in the battles.

According to Coleman, several Syrian missile batteries were redeployed from the Golan Heights to around Damascus.

was obviously not revolutionary, it made the IAF attacks both more lethal and gave them more survivability.[625]

On 17 October, IDF ground forces were able to cut a hole in the Egyptian air defence network and later the armoured spearheads continued to carve still more missile-free air corridors into the Egyptian depth. This was a decisive achievement. According to Cordesman and Wagner, the full suppression of the Egyptian air defence would not been possible without the support of the ground forces. This is why Gissin tends to see that the traditional definition of close support – with the air force taking the lead – reversed itself during the Yom Kippur War, or at least there was interaction when the IDF ground forces paved the way for air operations. The armoured formations and artillery destroyed 11 batteries. Although this was only 1/3 of what the IAF destroyed, most of the missiles destroyed by the ground forces were *Sa-6*s that were situated in the central area of further Israeli operations. The holes in the missile belt enabled relatively safe ground support.[626]

The performance of the IAF during the Yom Kippur War is often criticised. True, there were weaknesses in the action of the Air Force, although many of them resulted from factors that they were beyond the IAF's control. However, some seem to originate in the general belief in Israel's military superiority after the Six Day War. The most important of the IAF's deficiencies were its lack of a tactical intelligence system in a hostile environment and an inadequate command, control and communication system to deal with intelligence information and get target priorities right, plus inadequate interoperability with the ground forces.[627]

Nevertheless, the IAF quite successfully applied the principle of "Optional Control" in the command system, in contrast to the ground forces. Gissin calls this "A Single Manager with Positive/Optional Control Capabilities". In this

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[625] Aker, pp. 37 – 38, Cohen, p. 368 and 390, Cordesman & Wagner, pp. 83 – 85, Nikunen & Lappi, p. 191 and Schiff (October Earthquake), p. 253 and 284.

The IAF used at least the American-made *Shrike* anti-radar missiles and *Maverick*, *Rockeye*, *Walleye* and *Hobos* television guided assault missiles and bombs.
According to Schiff, only eight of the Egyptian missile batteries remained on 22 October.

[626] Gissin, p. 118, Cohen, p. 368, Aker, p. 113 and O'Ballance (1997), pp. 248 – 249 and 303.

According to O'Ballance, most of the *Sa-6*s were knocked out by artillery hitting their antennas.
See also Dougherty, p. 15.
According to Dougherty, the IAF flew almost 2,300 sorties on the Egyptian front between the start of the crossing and the cease-fire, but lost only four planes. Before the crossing the numbers were some 3,200 sorties and 38 losses. This tells something of the new efficiency of the IAF.

[627] van Creveld (1998), p. 277 and Gissin, pp. 414 – 415.

According to Gissin, the rather slow rate of recovery was also one of the weaknesses.
Later after the war the introduction of remotely piloted vehicles (RPV) – miniature aeroplanes equipped with intelligence devices – was one solution to the intelligence problem in a hostile environment.
See also Weizman, p. 290.
Just before the war, General Ezer Weizman stated that the IAF was prepared for battle but not for war.

concept all air defence components – radar stations both in the air and on the ground, surface-to-air missiles, anti-aircraft artillery and all combat aircraft – were under the direct command of the IAF commander for the first time. Despite the seemingly centralised command, this application of "Optional Control" made possible the allocation of resources in a flexible manner, and a switch from centralised command to a decentralised one, if necessary. The creation of the forward command posts can be seen exactly in this light and has strong similarities to the command principles of the ground forces that were created to master the time-space problem and maintain the initiative. Therefore, the origin of the IAF command system can also be seen in the concept of "few against many". In the IAF, this meant flexible command at the strategic level that trusted at the tactical level in small formations, pilots' skills and initiative more than in large combinations where problems of co-ordination would have limited individual initiative. However, the control and concentration of force at the operational level came true every time when operational tasks between counter-air missions, close-air-support, interdiction and strategic bombing were changed. Although the IAF did not mass flights against enemy targets, it did use continuous waves of small formations that – according to the principle of appreciation of the situation – was, in this war as in the Six Day War, a more effective and economic means.[628]

According to Cordesman and Wagner and Cohen, during the war the Israeli Air Force flew 11,200 sorties of which 8,400 were against Egyptian targets. This clearly shows that the main effort of the IAF was (despite the fact that the priority was first given to the Golan front for several days) on the Egyptian front, as it had also been during the Six Day War. Of these 11,200 flights the IAF lost, according to Cordesman and Wagner, 109 fighters and six helicopters, meaning a loss-rate of 1 percent, which is not much when compared to the intensity of the battles. The majority of the losses were attributed to ground-based air defence. The number of IAF planes downed in air-to-air combat varies from Cohen's 6 to Dupuy's and Cordesman's and Wagner's 21. Correspondingly, the Arabs lost 230 combat aircraft and 55 helicopters in air-to-air battles. That constitutes 65 percent of the total of their losses. This shows the superiority of the IAF in counter-air tasks. In addition, when the number of missiles launched by the Arabs, about 2,000 – 3,000 *Sa-2/3/6*s and some 5,000 *Sa-7*s according to Cordesman and Wagner, is compared to the kills, the ground-based Arab air defence was also inefficient. Only some 60 percent of the kills were attributed to surface-to-air missiles. However, the IAF lost nearly 20 percent of its planes. In the long-term – and without reinforcements – this would have been a serious problem for the IAF.[629]

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[628] Gissin, pp. 108 – 110, 120, 127, 376, 379, 385 – 386 and 422.

As during the Six Day War, the IAF sought flexibility and a quick response to the changing conditions in this war by having the pilots leaving on missions briefed by those who had just returned.

[629] Cordesman & Wagner, pp. 73 – 74, 80, 82, 86 and 90, Cohen, p. 390, Rubinstein & Murray, p. 128, Aker, pp. 51 – 52 and Dupuy (1992), p. 609.

Cordesman and Wagner state that the Israelis also had superior air-to-air missiles, *Sidewinder*s and *Shafrir*s.

Handel estimates that the IAF discovered that attacking the Egyptian and Syrian airfields was costly and ineffective while the defensive interception of Egyptian and Syrian aircraft allowed the Israelis to hit both the aircraft and their less easily replaceable pilots.[630] However, this statement does not consider the fact that if the Arab air defence installations – including airbases and planes – had not been suppressed, the Arab air force would have remained a potential threat. This would have been against the IAF's doctrine. The lack of aerial supremacy would have complicated the ground force operations on both fronts and, in addition, the possibility of air strikes in the Israel proper would also have remained. Besides, only in defensive tasks would the IAF have been used below its performance level, especially because the Arabs were, excluding the first days of the war, rather passive in the air. Therefore, relying purely on statistics that show that the main part of the Arab air forces was destroyed in air-to-air battles is misleading. Without the offensive action of the IAF this result – the neutralisation of the Arab air defence and airpower – would not have been possible.

11.5. The Israeli Navy – a dream fulfilled

The naval strategies of Egypt, Syria and Israel during the Yom Kippur War were different and this explains why battles in the naval theatre were not decisive for the final results of the war. Despite the fact that the Israeli Navy had fulfilled its modernisation plans on the eve of the war, its open sea capability had not been developed. In the short war concept this was seen as secondary and therefore the emphasis was put on developing an effective force for battles in the coastal waters. With the introduction of the new missile boats, the Israeli Navy became a highly offensive tactical force that, though inferior in strength, was able to compensate for this deficiency with technical and tactical superiority. Ideologically, this was parallel to the ground forces and the Air Force; the principal aim was to take advantage of enemy weaknesses. In practise the Navy was, because of the pre-war development programme and training, better prepared for modern warfare in the missile era than the other services of the IDF. As a matter of fact, Israel was the first state that based her naval defence on sea-to-sea missiles. In addition, the Navy was better trained for joint operations with the Air Force than the ground forces were.

The mission of the Israeli Navy was to defend the sea frontier and prevent it from becoming another battlefront. This task was to be implemented with

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According to Dupuy, the IAF downed 287 Arab planes in air-to-air combat, of which 55 were helicopters. Ground based air defence was responsible of 36 kills, 66 were miscellaneous or unknown and 58 were downed by friendly fire, for a total of 447 planes.
See also Gissin, p. 151.
According to Gissin and also Cordesman and Wagner, the loss ratio had been 4 percent during the Six Day War. However, this lasted only the first day. Even in the worst day of the Yom Kippur War, the loss-rate was below the 1967 value, some 3 percent.

[630] Handel (1994), p. 575.
See also Barclay, p. 46.
According to Barclay, the Egyptians had only one and a half trained pilot for every aircraft while the Israelis had four or five per plane.

offensive tactics; the Israeli Navy was to confront the Arab navies immediately when they moved to conduct bombardments on Israeli targets. The main emphasis of the Israelis was put on the Mediterranean Sea; in the Red Sea Israel had no missile boats. However, in the Gulf of Suez Israel also had several naval units, chiefly patrol boats and naval commandos. Despite the small size of this force, their doctrine was similar to that in the Mediterranean; to force the Egyptians onto defensive with offensive tactics. This concept proved the old concept of a "fleet in being" was still viable, the size of any force should never be underestimated. If there was just one vessel, it could still pose a threat. Nevertheless, the Israeli Red Sea force was helpless in the face of a blockade.[631]

The Egyptian strategy was based on a naval blockade outside the range of the Israeli Air Force. This was not harmful in a short war from the Israeli point of view, but in the long-term it might have been because Israel had no mine-sweepers and, according to Dupuy, the Egyptians were aware of this. Therefore, the strategy chosen was a realistic one. The Israelis enjoyed freedom of action in the inner waters. The Syrian strategy is more difficult to grasp. The Syrian Navy neither joined the naval blockade nor was very active in her coastal waters. Therefore it can be supposed that the Syrian naval strategy was mainly defensive and concentrated on protecting the coastal areas.[632]

Despite the different strategies, several clashes did occur between the belligerent countries. Sources on the results of the naval powers and the statistics on ships sunk are contradictory but two facts are distinguishable; firstly, the Israeli missile boats were superior to the Arab vessels and secondly, the Egyptian naval blockade was very effective. According to Dupuy, the Egyptians claim that they were able to reduce the commercial traffic to Israel's Mediterranean harbours by more than 85 percent and to Eilat by 100 percent. As a matter of fact, there are some hints that the consumption and supply of oil were, in the latter part of the war, a serious problem for the Israelis. But in the clashes, the Israelis were able to sink some 15 Syrian and Egyptian vessels, including several missile boats, and obviously without major losses of their own. This shows the technical superiority of the Israeli made *Gabriel* sea-to-sea missile over the Soviet-made *Styx* missile and also the up-to-date ECM systems of these boats. According to Dupuy and O'Ballance, the co-operation

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[631] Schiff (October Earthquake), p. 167, Williams (1989), pp. 270 – 271, Cordesman & Wagner, pp. 107 – 108 and van Creveld (1998), p. 242.

[632] Dupuy (1992), p. 557, Cordesman & Wagner, p. 107 and O'Ballance (1997), pp. 307, 309 and 312.

According to Dupuy, the Egyptian supreme command was not very satisfied with this defensive strategy. This is revealed in an interview with Commander-in-Chief, Egyptian navy, Rear-Admiral Fuad Zukri conducted by O'Ballance. According to Zukri "in this war our navy was not offensive enough, it was not given any offensive mission." However, the decision to prefer the blockade was a realistic one. The efficiency of the IAF was well known and the Egyptians – as well as the Syrians – had little with which to cope with this threat at sea.

between the Israeli Navy and Air Force also proved to be effective, helicopters locating enemy boats and fighters giving cover.[633]

The Israeli concept of using naval power offensively forced the Arabs to withdraw. From 14 October onwards, after two costly clashes with Israeli missile boats, the Syrian vessels stayed in their ports despite the fact that the Israeli Navy continued shelling Syrian targets occasionally, even up to the end of the war. The course of events were broadly similar on the Egyptian sea front. After the clashes between the Egyptian and Israeli missile boat off the Egyptian coast on the nights 8 – 9 and 11 – 12 October, the Egyptians also began to respect the efficacy of the Israeli *Saar*-class boats. Thereafter, according to Dupuy, the Egyptian Navy refused to challenge the Israelis except when they threatened important naval installations. The Egyptians were to some extent more active in the Red Sea naval theatre. Egyptian warships in this arena shelled Israeli installations in the Sinai and supported the ground operations with commando landings, but without distinguishing results. Rather, it was the Israelis that succeeded in this theatre as well. With similar tactics, though more intensive in scale, the Israeli torpedo and patrol boats forced the Egyptians to move their torpedo boats further back into harbours out of range of where the Israelis could take action.[634]

According to Dupuy, the Egyptian defensive tactics frustrated the Israeli Navy's hopes of winning significant victories against Egypt. This seems logical. Although the efficacy of the Israeli Navy was tested and proved in the few sea clashes that occurred during the war, the passivity of the Egyptians – and the Syrians as well – inclined Israel to underestimate the naval strength of her enemies. Nevertheless, the Israeli Navy was the only one of the IDF's services that was able to fulfil its mission as it had been defined. Israeli success in the naval theatre gave them freedom of action in coastal waters, which later cancelled the threat against the sea flanks of the ground forces, as well as against the civilian targets in Israel proper. In this way it freed ground forces and the Air Force to concentrate on their main efforts. In addition, the tactics, technical applications of weapons and the use of ECM equipment were to show the direction for the development of naval warfare after the war – at least in coastal waters – and also elsewhere.[635]

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[633] Cordesman & Wagner, pp. 18 and 105 – 106, Dupuy, pp. 559, 561 – 563 and 609, O'Ballance (1997), p. 316 and 322, The Military Balance 1973 – 1974, p. 33 and The Military Balance 1974 – 1975, The International Institute for Strategic Studies, London September 1974, p. 34.

The statistics on ships sunk vary according to the sources. According to Cordesman and Wagner and Dupuy, the Egyptians lost 10 vessels, of which two were missile boats, and the Syrian lost five vessels, three of them missile boats. Israel lost one vessel that is not categorised. According to O'Ballance, the Israeli Navy lost at least two, perhaps three *Saar*-class missile boats. However, according to Military Balance, in September 1974 Israel still had 12 *Saar*-class vessels.

[634] Dupuy (1992), pp. 559, 561 and 563 – 564, O'Ballance (1997), pp. 316 – 317 and Katz (1989), pp. 127 – 128.

[635] Dupuy (1992), p. 561 – 562 and 564.

The complete supremacy of the Israeli Navy did not extend to Egyptian and Syrian waters because of the activity of the coastal artillery.

11.6. Assessment of the operational art

When assessing the IDF's performance during the Yom Kippur War, five elements of warfare are picked above the others in the post-war evaluations. They are the strategy of "defensive defence", intelligence, pre-war planning, combined arms principles and the command system. The first two are linked to the strategic level. The weaknesses in strategic intelligence are widely known and admitted and the strategy of "defensive defence" is also acknowledged as having been too inflexible. However, there is less discussion of the importance of these two factors in the operational solutions. It seems that the main responsibility for failures on the battlefield have been put on the operational commanders' shoulders.

When one is evaluating the results of the Yom Kippur War, simplifying, it can be said that Israel's strategy failed because the war broke out. Israel did not have the 48 hour time period that military intelligence had promised for an orderly call-up. This was a fatal error and, as a matter of fact, the Agranat Committee concluded in its report after the war that there were no grounds for such an absolute guarantee. In the intelligence community, estimates are always speculative, as General Ehud Barak says in his article *Issues in Intelligence*. Information is gathered from many factors, some of them in enemy hands, and can never be perfectly relied on. Such was also the case in October 1973 and when the situation was revealed, it was too late to mobilise. The pre-emptive air attack was also cancelled because of the international environment.[636]

The strategic failure had implications for the IDF's operational echelons. During the early days of the war, the IDF hesitated over what to do, especially on the Sinai front. Hesitation, which was a consequence of a mixture of over-confidence and a poor picture of the situation both at the strategic and operational levels, led to tactical set-backs on the Bar Lev Line that prevented effective counter-operations in the early phases of the war. First and foremost, it was the strategic decision to defend the Canal line that prevented the operational levels from acting according to the situation. According to Handel, the principle of "defensive defence", which he calls the "yield no inch" policy, meant forsaking even the possibility of mobile defence and manoeuvre.[637] Even so, mistakes were also made at the operational level both before and during the war, the most known of them the obsolete force structure when compared to the picture of warfare at the time and the failures in the command process during the war itself. In addition, the Israeli plans did not take enough

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[636] Chorev, Moni: Surprise Attack. The Case of the Yom-Kippur War, the Industrial College of the Armed Forces, National Defense University, Fort McNair, Washington D.C. 1996, p. 4 – 5 and 21 – 22.

Ehud Barak's comments in Hebrew are cited in Offer and Kover (ed.): Intelligence and National Security, Barak, Ehud: Issue in Intelligence, p. 493.

According to Chorev, three things seems to stand out from the rest in the background of the surprise: 1) The lack of direct evidence, which made it very difficult to assess the information correctly, 2) the persistence of preconceptions, even in the face of evidence and 3) the intelligence assessment affecting the operational concept and vice versa.

[637] Handel (1994), p. 573.

account of the wide varieties of chance for their own advantages in the Sinai. On the Golan Heights, the Israelis were surprised at the strategic level as well. However, despite the crushing inferiority in strength, the greater preparedness in an environment that was more suitable for "tank-defence" than that of the Sinai and the priority of support – including the IAF – led to early, though costly, success. The Israelis never totally lost their freedom of action on the Golan, even in the mobile tactical battles.

11.6.1. Combined arms principle

The deficiencies in the IDF's force structure, most significantly the lack of mechanised infantry trained to co-operate with tanks, the lack of foot infantry on the whole and the lack of artillery seriously limited the IDF's ability to fight throughout the operational depth. Jonathan House sees a similarity with the German force structure during WW II here: at first the Germans had organised mechanised infantry in their *Panzer* divisions, during the war they abandoned this structure. In Israel, this was done over the long-run. After the 1956 War, tanks and mechanised infantry were in balance in the organisations, but gradually up to the Yom Kippur War the percentage of mechanised infantry – as well as foot infantry – was reduced. According to Gelber, this was done in light of the experiences of the Six Day War where the combination of armoured forces supported by the Air Force had proved to be successful. In any case, the tendency of favouring tanks and neglecting other arms went against the combat multiplication effect that is achieved when the various arms are synchronised in battle. During the Yom Kippur War, the lack of an integrated all-arms approach in the Israeli concept caused the loss of the synergistic combat multiplication, which occurs when someone presents an enemy with complementary efforts, especially in the enemy's depth beyond the forward lines of troops. That was the case when the IDF armoured units tried to push their way through the Egyptian bridgeheads to the Suez Canal.[638]

Ariel Levite tends to hold that the IDF was a prisoner of its doctrine when it tried to transfer the battles to enemy territory. Defensive skills had been lost and premature counter-attacks led to heavy losses. True, the Israelis were victims of their doctrine, but it is too harsh to say that the operational doctrine was bad, it was just not used, as Doctor Shai puts it. Loefstedt has estimated that because of the underestimation of the combined arms principle, the result was that the campaigns were fought as close battles, which lengthened the campaigns and raised casualty rates. In other words, the IDF's organisational deficiencies did not enable doctrinal deep manoeuvres, instead, the lacks in arms synchronisation led to a war of attrition, especially in the Sinai. Because

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[638] Investigating Committee of the Yom Kippur War; The Report, p. 1356, House, p. 179 and interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber and Doctor, Colonel (ret.) Meir Pa'il.

See also Cordesman & Wagner, p. 53, Dupuy (1992), p. 608, Luttwak & Horowitz, p. 368 and The Military Balance 1973 – 1974, p. 33.
In theory, Israel had almost two armoured vehicles for the infantry for each tank. However, only 1/8 of them were modern APCs capable of following the tanks. This was also the case with artillery pieces. Only a small minority were long-range self-propelled weapons.

of the previously mentioned facts, it is not fair to say that it was only the offensive tactical or operational principles that caused the set-backs during the first days of the war. Moreover, since the hastily assembled infantry lightened the burden of the tanks during the holding phase, the Israeli operational success rested on offensive doctrine after this and this tendency was also to remain after the war. But the link between organisations and doctrinal principles becomes clear in this context.[639]

When comparing the application of the combined arms principle in the Sinai and on the Golan Heights, the differences are evident. Generalising, it can be said that on the whole the Israelis were more successful on the Syrian front than on the Egyptian front. There were several reasons for this. First, the IDF already had infantry equipped with APCs, jeeps and antitank weapons on the Golan Heights before the war. Troops were also trained to co-operate with tanks – as were infantry officers on the whole, according to Pa'il. Yet more importantly, the IDF's Golan forces had battle experience from the past years' anti-guerrilla operations in "*Fatahland*". It is obvious that General Eytan had some role in this. In the early 1970s, he had been the Chief Infantry and Paratroop Officer and, according to Weller, had the ability to use his infantry more imaginatively than most IDF commanders at the time. In Eytan's concept, mechanised infantry was also trained to fight dismounted in platoon combinations. According to Asher and Hammel, the entire Israeli defensive force on the Golan – tanks, self-propelled artillery, infantry, and armoured infantry – could all be in motion on short notice. Therefore, while the tank was also the main instrument of mobile defence on the Golan Heights, the flexible use of all arms covered the tanks better against enemy antitank patrols and commando teams than was the case in the Sinai before the completion of the mobilisation and the *ad hoc* creation of foot and mechanised infantry. In addition, at the very beginning the primacy of the Air Force support in wearing down the Syrians was significant.[640]

The removal of infantry, as well as mortar units equipped with half-tracks from the organisations of the tank battalions was also a serious mistake that was revealed during the first days of the Yom Kippur War, especially in the Sinai where the streamlined armoured brigades were in use. It is also interesting to note that those units that were removed from the modernised

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[639] Levite, p. 10, discussions with Doctor, Colonel (ret.) Hanan Shai and Loefstedt, p.18.

See also Investigating Committee of the Yom Kippur War; The Report, p. 1341.
This report presents a chart of the hierarchy of the dominant leadership principles at formation level. The core idea of this example is the primacy of the principle of using manoeuvre to wear the enemy down.

[640] Katz (1989), p. 94 and 100 – 102, interview of Doctor, Colonel (ret.) Meir Pa'il, Asher & Hammel, p. 141 and Weller (1975), p. 63.

Weller interviewed Eytan in the early 1970s before Eytan was assigned to the Golan. It is obvious that Eytan rooted his concept of how to use infantry in his division in exercises before the war.
According to Katz, large combined and joint operations were conducted against Palestinian guerrilla bases since 1969, mostly in "*Fatahland*". These operations included forces of the *Golani* and *Barak* Brigades, *Sayeret Egoz* and often also squadrons from the Air Force.
The ratio between the tank formations and infantry units at the beginning of the Yom Kippur War on the Golan Heights was some 2 : 1, not very bad in terms of pure numbers.

brigades were transferred to the older armoured brigades with Sherman tanks. A large proportion of these brigades were deployed on the Golan Heights during the Yom Kippur War. Therefore, the result was that in the Sinai, which had been the main operational area for tanks since the creation of the Armoured Corps, the organisations, as well as the plans, were not in accordance with the operational doctrine of deep battle while on the Golan the force was relatively well balanced with the doctrinal demands of avoiding attrition in mobile operations in depth.[641]

The greater Israeli success in the battles of the Golan is sometimes also explained by the commanders' ability to apply combined arms principles. Generals Hofi, Eytan and Laner were all paratroopers. According to Sharon, they were well aware of the advantages of combined arms battle from their past experience. On the other hand, high-ranking commanders in the Sinai were – excluding some exceptions like Sharon himself – armoured officers. Therefore, it is often said, especially by the paratroopers, that the continuous tank attacks against Egyptian tank-killer teams during the first days of battle were a consequence of the highly specialised IDF armour officers' inability to rethink their tactics and realise the need for artillery support and for a mixed combat-team approach. In a way this statement, as seen in Luttwak and Horowitz, is justifiable. During the first day on the Sinai front, primacy in the mobilisation of reinforcements was still given to the tank forces despite the failures of the Sinai Division in the counter-attacks. Nevertheless, as Luttwak and Horowitz also admit, on the whole it can not be proved that commanders on the Egyptian front were less educated in understanding the advantages of synchronising different arms, though there certainly were views on the superiority of tanks on the battlefield in the Armoured Corps as well. The ability to converge according to the situation supports this statement. In the battles that were fought in the Sinai from 8 October onwards, the tendency to balance the force structure by gathering and equipping infantry in order to give cover to the tanks as well as by concentrating the little artillery that was present reveal the armoured officers' understanding of combined arms battle.[642]

The different tactical and operational views of Israeli tank commanders and paratroopers have to be examined in a wider time span than the first three days of the war. Luttwak and Horowitz shed light on this question. The IDF

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[641] Adan, p. 206 – 208, Schiff (October Earthquake), p. 104 – 105 and Eshel, David: Chariots of the Dessert, Brassey's, London 1989, p. 88 – 89.

See also Rothenberg, p. 158 – 159 and Katz (1996), p.128.
Rothenberg states that Adan also preferred tanks. However, according to Adan, *M-113*s (*Zeldas*) gave sufficient cover and possessed enough mobility to co-operate with *Centurions* and *M-60 Pattons*, the most modern tanks in the IDF at the time.
It is also interesting to note that the 7th Armoured Brigade had a mechanised infantry battalion and some supporting elements as well. Obviously this was a consequence of organisational disputes that were not settled before the war.

[642] Sharon, p. 150, interview of Major General (ret.) Uri Simhoni, Luttwak & Horowitz, p. 368 – 369 and 376, Adan, p. 206 – 208.

Both Generals Hofi and Eytan had been Sharon's subordinates. Simhoni was Operations Officer in the Northern Command during the Yom Kippur War. According to him, hard life and almost daily action had trained the IDF's forces to co-operate on the Golan. Simhoni is also originally a paratrooper.

armour doctrine, which stressed tanks' usability in mobile battles to take advantage of the possibilities on the battlefield was adopted and trained for in the IDF from the early 1950s and since then it has proven to be suitable for the qualities of the IDF's manpower in Israel's conditions. On the other hand, the role of paratroop forces was seen not only in swift wartime deep penetration operations – which on a wider scale have not yet been seen in the wars of the Middle East – but also in peacetime anti-guerrilla operations. These both were aimed, simplifying, at converging on a single objective in a carefully planned assault on a static enemy, as Luttwak and Horowitz express it.[643] So, these schools – the armoured and infantry, one might say – represent different methods of warfare and can not be compared so easily. The IDF's principle of using tanks can be seen as an action at the operational level while paratrooper operations have mainly been meticulous tactical actions. Nevertheless, Israeli armour in the Sinai was at first used to contain the enemy offensive via piecemeal counterattacks, which was in contradiction of the principles of armoured warfare. According to Kahalani, this was not, however, a consequence of the disputes over tactical and operational doctrine before the war, but of lack of choice.[644] There were not enough available forces at the time to launch concentrated counter-attacks. In any case, this statement does not explain the organisations that were not suitable for combined arms battle. Not to mention the poor preparedness, delays in using the existing plan, command problems and inadequate Air Force support, which can be seen as being among the main reasons behind the operational failures on the Sinai front during the first three days of the war. On the other hand, according to Williams, tank crews at the tactical level, both regular and reservist, displayed professionalism, exceptional gunnery, dedication to mission and motivation during the war on both fronts.[645]

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[643] Luttwak & Horowitz, p. 368 – 369.

[644] Kahalani (1984), p. xi.

See also Sharon, p. 295.
Sharon also mentions that the Southern Command broke the basic rules of armoured warfare by committing the armoured reserves in piecemeal counter-strikes. He writes that "Instead of using the tanks in large forces as armoured fists, they frittered them away piecemeal. Instead of taking advantage of the tanks' potential for manoeuvre and surprise, they were launching them at fixed targets along known approach routes, allowing the Egyptians to anticipate them and organise a deadly reception."

[645] Williams (1989), p. 211 and Gissin, p. 320.

Williams bases his statement on a report of IDF analysts led by Major General Moshe Peled. At tactical level, the innovation in the ranks of the armoured forces had never vanished. According to the report, survivors from tanks that had never operated together were regrouped and returned to battle and exhibited tenacity and good tactical judgment, and often operated without senior officers. According to Gissin, several foreign observers have pointed out that the IDF's reserve units in 1973 fought and were led as well as regular army units.
See also Gawrych (1996), p. 76, O'Ballance (1997), p. 115 and Schiff (October Earthquake), p. 172 and Gabriel, p. 179 – 181.
When evaluating the performance of the IDF during the Yom Kippur War, the intensity of the fighting should be remembered. According to Sharon, this war was Israel's first real war, the others had only been battles. The intensity of the fighting in 1973 produced a high ratio of

According to General Elazar, the Yom Kippur War taught the Israelis the importance of the combined arms principle at the tactical and operational levels of warfare.[646] Despite the organisational deficiencies, the Israelis were able to recover from the set-backs already during the war. Doctor Gissin states that the experience of the Yom Kippur War seems to indicate that the organisation that is capable of organising combined defensive-offensive operations within the shortest response time will have an advantage on the future battlefield.[647] This happened to be the IDF during the Yom Kippur War. In a few days, in less than a week really, the Israelis were able to analyse their deficiencies in the command chain and organisations, suitably modify them to counter the challenge of the battlefield and wrest operational initiative from their enemies. It is a respectable achievement for any army in such a short period of time.

While the combined arms principle was more or less in use on the Golan Heights from the very beginning of the war, the Israelis also learned and were able to use the support of infantry, mechanised infantry and artillery to relieve the burden of tank crews, especially at night-time on the Sinai front after the holding phase. In this phase, mobile defence in the Sinai came into being and IDF troops began to strike the Egyptians with small detachments supported by mobile infantry units and artillery. Indeed, it has not been shown that the lack of antitank weapons was a decisive deficiency on either front. Tanks were still able to cope with enemy tanks if only they had covering infantry against enemy antitank patrols.[648]

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psychiatric cases, mostly at the tactical level. Doctor Gawrych estimates that the figures ranged from 12.3 to 23.1 percent of all nonfatal casualties. According to O'Ballance, in a study published in the Israeli *Medical Association* journal, 9 percent of all the Israeli wounded were psychiatric cases. This coincides with Gawrych's numbers, which had only counted nonfatal cases. Gabriel puts the rate of battle-shock casualties between 3.5 percent and 5 percent, meaning obviously serious psychiatric reactions while the numbers for all categories were obviously higher. According to Schiff, there were hundreds of psychiatric cases, to put it purely in terms of raw numbers, but most of them were returned to battle after a short rest.

[646] Elazar, David: Military Lessons in Williams, Louis (ed.): Military Aspects of the Israeli-Arab Conflict. International Symposium, Jerusalem 12 – 17 October 1975, University Publishing Projects, Tel Aviv 1975, p. 248.

[647] Gissin, p. 146.

[648] Of the Sinai front; El-Shazly, p. 162, Katz (1989), p. 124 – 125 and Adan, p. 40, 152, 205, 255 and 284 – 286, of the Golan front Asher and Hammel, p. 192 and 200, Katz (1989), p. 119, Katz (1996), p. 184 and Kahalani (1984), p. 129.

Special forces were used in commando-hunting and reconnaissance tasks, *Sayeret Shaked*, for example, joined the conscript paratroopers in countering heliborne Egyptian commando forces. Tactically *Shaked* secured ten square kilometre zones called boxes, and then closed in from all sides for the kill.

See also O'Ballance (1997), p. 192, House, p. 176 and Cordesman & Wagner, p. 65.

Sometimes the combined arms principle was violated purposely. This shows an understanding of the situation. In Tel Shams on the Golan front, for example, a paratroop brigade used indirect approach; darkness, silence – artillery support was cancelled intentionally – and an unexpected attack direction to surprise their enemy.

According to House, the Israelis had refused to purchase American-made *TOW* antitank missiles before the war because they still considered the tank to be the best antitank

Israeli airborne operations were rare during the Yom Kippur War. In addition, it is generally estimated that helicopters were used ineffectively despite experiences in Vietnam War. Three of the operations where helicopters were used during the Yom Kippur War are worth mentioning; 1) on the Golan during the last days of battle a heliborne unit was transferred to Syrian territory to set up an ambush for the Syrian reinforcements, 2) the re-conquest of Mount Hermon where paratroopers were helilifted to their task to save time and to take advantage of surprise, and 3) connected to the Suez crossing a heliborne assault against an Egyptian electronic monitoring station on Jebel Ataka. In a way, this undersized use of heliborne forces shows that large landing operations also did not play a central role in the Israeli operational doctrine in the 1973 War. Amos Perlmutter provides a rather critical view of this. According to him, one of the main IDF deficiencies during the Yom Kippur War was the inability to use paratroopers according to their potential, which means that they were not used in support of the armoured forces and the Air Force to eliminate enemy antitank and antiaircraft weapons. In any case, however true this statement might be, the use of heliborne landings would have been a risky business without air supremacy; a fact the Egyptian and Syrian commando operations proved very well. Despite the fact that the IAF, in theory, had transport capability for numerous smaller landings or two larger battalion landings at a time, the operations were implemented only during the latter part of the war when the Israelis had at least partial aerial supremacy.[649]

The role of artillery during the war also deserves some remarks. According to Cordesman and Wagner, the IDF made little effort to integrate its artillery into its concept of mobile warfare prior to the war. Only a few of the artillery pieces that Israel had on the eve of the Yom Kippur War were self-propelled and even fewer were modern. Besides, artillery was trained and organised as a separate arm, which can be seen in the problems with using and co-ordinating fire in the early days of the war. This is also perfectly revealed in Brigadier Kahalani's battlefield description in *The Heights of Courage* where he says that until the Yom Kippur War "artillery has always seemed to me to be something we can win without, perhaps because it doesn't do much harm to tanks." Kahalani changed his views during the war.[650]

The Yom Kippur War was also the first of the Arab-Israeli wars where IDF artillery experienced losses. Already during the initial bombardments on 6 October, the Egyptians destroyed much of the IDF's artillery contingent in the Sinai, according to Aker some 40 percent. On the other hand, Eshel states that only a few artillery pieces on the Golan Heights were wrecked in the Syrian fire. This was also important to the success of the combined arms battles on

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weapon. However, during the war the Americans delivered *TOW* systems to the IDF. With hastily improvised training and tactics, the Israelis scored, according to Cordesman and Wagner, some 13 hits against 9 tanks out of 20 shots fired. Older Israeli *SS-11* and *Cobra* missiles were mostly left in storage because they had been too difficult to train with for reserve forces while light anti-tank rockets (*LAW*s) had too limited a range. So, most Arab tanks were destroyed by Israeli tanks.

[649] Herbert, p. 101 – 102, Katz (1989), p. 119 – 121 and 125 and Perlmutter (1978), p. 88.

[650] Cordesman & Wagner, p. 53 – 55, 66 and 68 and Kahalani (1984), p. 32.

the Golan. Nevertheless, the principles of how to deploy artillery were similar on both fronts. During the War of Attrition, the Israelis had adopted, instead of digging-in, the principle of changing firing positions to avoid enemy fire. However, according to Brigadier Arie Mizrachi, this principle was not an advantage during the Yom Kippur War on the Sinai front; to the contrary, under Egyptian visual observation, which was almost omnipresent in the early phases of the war, the IDF artillery suffered rather heavy losses. The rougher features of the terrain on the Golan made Syrian fire control much more difficult, which at least partly explains the battlefield durability of the IDF artillery.[651]

During the holding phase, the number of IDF artillery pieces grew, but the numbers were never decisive during the war. The initial 44 weapons on the Golan tripled during the war with the two additional divisions. Though the exact numbers are not available on the Sinai front, the quantity might have been approximately equivalent to the forces on the Golan if the total inventory of IDF artillery pieces – excluding antitank guns – was some 300, as has been estimated. On the whole, however, the role of artillery on the Golan Heights seems to have been more significant than in the Sinai. There was no room for decisive manoeuvre in defence on the Golan, as there was in the depths of the Sinai. It is also obvious that the purely technical preconditions for using artillery support were better on the Golan, where knowledge of how to use artillery was better and where the artillery was better able to survive the initial Syrian artillery and aerial attacks. For example, in the battles of the 7th Armoured Brigade between Tel Hermonit and a lower hill approximately five kilometres to the south called "the Booster" – a place that was later named "the Valley of Death" – long-range artillery joined, according to Katz, the battles with accurate fire already during the holding phase. In any case, the Israelis had adopted combined arms principles during the counter-offensives on both fronts, including the use of artillery - especially in preparatory bombardments preceding manoeuvre.[652]

In his book *The Sword and the Olive,* Martin van Creveld describes the combined arms battle on the Golan Heights during the IDF's counter-offensive as follows: "No longer did the tanks charge on their own; instead they moved inside an artillery "box" formed by thousands of exploding shells while they and their accompanying APCs raked every rock capable of offering shelter with machine-gun fire." Artillery followed the tank divisions and joined in the preparatory bombardments on the Sinai front as well. In addition, long-range artillery, transferred to the western side of the Suez Canal, played a central role in punching holes in the Egyptian air defence network. What is interesting in the methods that the IDF adopted during the Yom Kippur War is the fact that

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[651] Movshovitz, Yoram – Petreanu, Dan: The Artillery Corps – 1948 to Present, IDF Journal IV, NO. 3, Fall 1987, p. 19, Ghazala, p. 7, Aker, p. 39, Eshel, David: The Yom Kippur War, Peli Printing Works Ltd., Hod Hasron 1978, p. 40 and Mizrachi, Arie: Israeli Artillery Tactics and Weapons – Lessons Learned in Combat, Field Artillery 1/1990, p. 9 – 10.

Brigadier Mizrachi was the commander of the IDF Artillery Corps before he resigned in 1983. He served as a battalion commander and fire support officer in an armoured brigade during the Yom Kippur War.

[652] Katz (1996), p. 159 and Cordesman & Wagner, p. 54.

the Israelis chose to favour artillery over infantry to support the tanks. According to Cordesman and Wagner, this decision was made for two reasons; first, self-propelled artillery could keep up with the tanks and second the use of artillery spared the infantry from casualties.[653]

11.6.2. "Optional Control" versus "Reversed Optional Control"

According to Gissin, the contradiction between doctrinal and political views, as well as the new technological realities, was one of the primary causes for the IDF's command, control and communications problems in the Yom Kippur War. One can mostly agree with this statement. The Agranat Committee report, instead, mostly put the responsibility for the failures on a crisis of confidence at the operational level between superiors and subordinates. Although such situations existed on the Southern front, it is biased to concentrate only on the deficiencies in the operational echelons. Basically, it was the political views that gave the IDF guidelines to prepare only for limited conflicts. However, this doesn't deny the fact that the command process in the Southern Command was in crisis during the first few days of the war.[654]

Until the early morning of 7 October, Gonen's headquarters were situated in Beersheva, after which the command post was transferred 30 miles closer to Dveila. This complicated the situation, especially because of Gonen's personal command style. The atmosphere in the Southern Command command post was, according to Adan, anything but controlled for planning and supervising the operations. Procedures for staff work were absent and outsiders – especially reporters who had been given access to the war room – disturbed the command process. In addition the commanders of the reserve divisions – Adan and Sharon who earlier had been commanders of Commander-in-Chief Southern Command, General Gonen – had their own views on how to fight. In this environment the pre-war plans were not used until the point where they had become obsolete. It is easy to speculate what would have happened if the active tank brigades had been deployed to the Suez Canal according to the plan. Because of the unrealistic picture of the situation – and for whatever

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[653] Katz (1996), p. 252, van Creveld (1998), p. 232, Adan, p. 196 and 359 Dupuy (1992), p. 594 and Cordesman & Wagner, p. 55 – 56.

General Adan's statement of the situation on 10 October perfectly describes how easily the Israelis were satisfied when speaking of artillery. He states that he had a lot of artillery available on that day, when Adan's division had 40 artillery pieces,.

See also Asher & Hammel, p. 125.

Israeli and Arab principles in using artillery support deviated from each other significantly. While Arab artillery doctrine emphasised massive saturation fire, Israeli principles called for precision firing at specific targets. Statistics do not reveal which system was more effective. However, from the Israeli point of view it can be estimated that their solution was the only one that could be carried out with such a small amount of artillery. Besides, the IDF also had some big calibre weapons (155 mm and 175 mm), which were generally seen as only being effective in precision firing. In addition, the fire control principles also had their influence on chosen methods. Underdeveloped systems often emphasise the principle of saturated fire.

[654] Gissin, p. 339 and Investigating Committee of the Yom Kippur War; The Report, p. 1368 – 1369 and 1405 – 1406.

other reasons there might be to explain the delays – the deployment of the regular forces was not carried out until it was late. This was the beginning of the process that is generally called by the name of "Reversed Optional Control". According to Generals Adan and Sharon, Gonen made his evaluation of the situation without relying on his subordinates' information in the early phases of the war, although they were on the spot of the action and he was some 150 km back from the front. Instead of delegating decision-making and relying on subordinates' appreciations of the situation and reporting, the Southern Command itself made decisions that were often based, not on information from subordinates, but on intuition and assumption. Despite the grave reports from the front in the afternoon hours of 6 October, the mood in the Southern Command was still optimistic.[655]

Van Creveld sees General Elazar's distrust in his subordinates as a basic reason behind the "Reversed Optional Control" principle. According to van Creveld, commanders were compelled to wait for his orders and therefore positioned themselves too far to the rear while their units went on the offensive and consequently lost touch. Gelber also tends to see the command process as van Creveld does, all information went along the hierarchy. While there might be some basis for these statements, all this can not be generalised. First, if Elazar had made his own choices in the rejuvenation of his officer corps, the statement of distrust sounds a little bit strange. Second, while Elazar was blamed for the failures in the south and was forced to resign after the war, he as the Chief of Staff – realising that Israel did not have the strength to fight simultaneously on two fronts – had to order priorities that restricted the autonomy of the Southern Command. According to Adan, this more showed a good appreciation of the situation and was therefore a strategic decision. By doing this, Elazar exploited the interior lines and concentrated first on the most

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[655] Adan, p. 33 and 92, van Creveld (1985), p. 206, 208, 224 and 230 – 231, van Creveld (1998), p. 239 – 240, O'Ballance (1997), p. 100, Schiff (October Earthquake), p. 70, Sharon, p. 293 and 304 and Investigating Committee of the Yom Kippur War; The Report, p. 1368 – 1369 and 1405 – 1406.

The tendency to believe that the situation was better than it really was is called the "Vietnam syndrome" in the Agranat Committee report.

The crisis of confidence between the operational commanders was at least partly a consequence of the resignations of many of the senior officers before the war.

Adan and Sharon were both senior to Gonen and several months before the war Gonen had been Sharon's subordinate. This was a natural cause reason of friction, too.

According to Adan, Gonen also looked down on the Egyptians. This underestimation might also have caused delays if Gonen trusted in the fighting abilities of the strongholds and waited for his strength to grow for a concentrated counter-offensive.

Sharon writes that he pressured Gonen to transfer his command post closer to the front, but this happened only on the morning of 7 October.

See also Morris, p. 20 – 21 and 23, Dupuy (1992), p. 585 and Cohen, p. 347.

Cohen and van Creveld locate the Southern Command forward command post in Um Hasheiba. Obviously this is the same place that Sharon calls Dveila. Sharon built this small town of fortified underground command centres, including intelligence installations that could see deep into Egypt, during his tenure as OC Southern Command.

Morris states that the first Egyptian tank units crossed the Canal at about 18.30 hours on 6 October. If the plans were activated earlier, this might have given the Israelis a better chance of meeting the Egyptian second echelon, especially if the estimate made by Dupuy is even partly true; the Bar Lev Line decisively delayed the Egyptian crossing in its early stages.

dangerous threat, a decision which Wallach sees as being striking similar to General Yadin's actions during the War of Independence. Third, General Elazar had to act in the political framework, which stressed the limited war concept before the war. Therefore it is obvious, as a consequence of this, that the control of the commands was tightened to avoid provocations that could lead to a war. This detail created a situation where, according to Gissin, "the cardinal principle for combat command, the unity of command was violated." In any case, this was against the principle of "Optional Control" and might partly explain the difficulties between the General Headquarters and the Southern Command.[656]

In this atmosphere of top-heavy control of the war, General Elazar found himself during the first days of the war, according to van Creveld, reporting to his own direct superiors – to the "War Cabinet" – at the very time when he was supposed to be making decisions that he had reserved for himself; giving overall operational guidelines, allocating reserves and giving priorities to the commands. Being out of his command centre, Elazar was compelled to rely on his subordinates' reports, many of which were misleading. Although the overconfidence in the IDF's performance can be seen as having been the main reason behind the first operational decisions, in theory the principle of "Optional Control" worked at the General Staff level, although only from the top down. The reporting was based, however, on too optimistic a battle picture that later on led to decisions that were not appropriate for the actual situation. Therefore, as van Creveld states, instead of certainty being created by means of supervision from the top down, uncertainty spread from the bottom up. Waking up to this reality made the General Headquarters cautious and forced it to tighten its control of the Southern Command at the expense of the loss of initiative.[657]

Luttwak and Horowitz also criticise the Israeli planning process before the war as being behind the failures of the Southern Command. The new situation created by the Arabs' continuous and permanent readiness to strike after the War of Attrition should have, according to them, resulted in a basic change in the defence plans in the Sinai. No change was made although the plans called for changes in deployments in a zero-warning situation, as the researchers

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[656] Van Creveld (1998), p. 240, Gissin, p. 357 – 358 and interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber, Major General (ret.) Avraham Adan and Professor, Colonel (ret.) Yehuda Wallach.

See also Katz (1996), p. 125, van Creveld (1985), p. 209, Schiff (October Earthquake), p. 91, 148 and 283, Asher & Hammel, p. 157 and Cohen, p. 347.

According to Katz, Gonen had been Elazar's choice for the post of OC of the Southern Command. Nevertheless, Gonen's designation was also a political one. He was a heroic brigade commander of the Six Day War with a good public reputation. There was no experience at the time with his abilities as an operational commander.

Because of the unresolved relations between the Chief of Staff and the Minister of Defence, Moshe Dayan's role was more confusing than supporting. Dayan, the hero of Israel's past wars, regularly intercepted Elazar's orders during the Yom Kippur War and showed a lot of hesitation during the war. Although Elazar usually kept his own council, this certainly made his role much more difficult.

[657] Van Creveld (1985), p. 220 and 229 – 230, Schiff (October Earthquake), p. 122 and Gawrych (1996), p. 46 and 49.

have said. According to them, a permanent forward deployment should have been the solution in this environment. The Israelis were also, according to van Creveld, aware of the Arab arsenal of thousands of antitank weapons, but it did not cause any significant changes. According to Adan, the operational practice in autumn 1973 was to react instinctively and push the tank units to the strongpoints – without the cover of infantry and artillery. In the first two days, the Israelis acted according to these principles while the Egyptian antitank infantry established ambushes and killing zones that caused serious losses to Israeli units.[658]

When the war broke out, the IDF General Headquarters led the territorial commands in totally different ways. While the Northern front was given a lot of independence in its fighting, the Southern Command was kept under the General Headquarters' supervision. Three facts might explain this. First, according to Adan, Gonen's repeated requests for changes in plans or orders of battle limited his authority. Nevertheless, whatever his capacity to lead the Southern Command, his position between the General Headquarters' tendency to limit his authority and his divisional commanders' demand to be active was not easy. The General Headquarters' viewpoint of giving priority to the north, however, prevailed. Third, the fact that Elazar had been the OC of the Northern Command – thus knowing the conditions, people and plans – might explain his attitude to giving more freedom to the north as well.[659]

Maybe as a consequence of the reasons explained above, the Northern Command acted rather well according to the principles of "Optional Control". At first General Hofi's command post was situated side by side with that of Brigadier Eytan's staff in Nafah. This arrangement made it possible to get a picture of the difficulties that the 36th Division had on the Golan and to also control the minor reinforcements that were available during the first two days. In the early hours of 7 October, Hofi's command post proved to be too near the front and after delegating responsibility for the defence of the Golan to Brigadier Eytan, Hofi left for his command bunker in Nazareth. In addition, it seems that the Israelis on the Golan followed – unlike in the Sinai where the plans existed but were not followed – their pre-war ideas on how to fight in this area better from the very beginning, at least during the defensive phase. According to van Creveld, personal relations among commanders in the Northern Command were also better than in the south. This was an extremely

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[658] Luttwak & Horowitz, p. 343, van Creveld (1998), p. 232, Adan, p. 82, Gawrych (1996), p. 39 – 40 and O'Ballance (1997), p. 105.

According to van Creveld, the head of the IDF's planning branch, Brigadier Avraham Tamir, had warned his superiors before the war of the Arab antitank threat, but without results.
The Sinai Division lost at least 2/3 of its tanks during the first two days.

[659] Katz (1996), p. 125, Asher & Hammel, p. 157 and Adan, p. 33. 107 – 108, 111 and 149.

According to Asher and Hammel, Dayan's orders to the Air Force bypassing Elazar and his pressure to withdraw from the Golan Heights provoked Elazar. He made it clear to Dayan that as the Chief of Staff, he, not Dayan, was authorised to issue direct orders to the military forces. Elazar's way of trusting his subordinates on the Golan was also revealed when he told Dayan that General Hofi was the on-the-spot decision-maker on the Golan and would make evaluations of the situation, not Dayan.
See also van Creveld (1985), p. 227.
According to van Creveld and contrary to Katz, Elazar had little confidence in Gonen.

important matter and clearly shows the role of the combination of trust and the maintenance of aim in the result of the battles. The first two days of independent fighting by the tactical echelons freed the divisions and the Northern Command to concentrate on the operational problems; thus, while Hofi fixed his attention on the larger picture, Eytan focused his on controlling the holding battles and the arrival of reserves on the Golan Heights. Obviously the use of armoured formations in mobile defence on the Golan was rather flexible already at the beginning of the war for these reasons – in addition to a better force structure than that of the Sinai. Especially the 7th Armoured Brigade, which was originally designed for the Sinai, and was trained there, distinguished itself during the battles. This shows the appreciation of the situation. In addition, Elazar's hints on 10 October of a general offensive into Syrian-held territory also shows the function of the command process, where superiors give the overall guidelines of operations while the subordinates have the power to decide how they will implement their commanders' will.[660]

According to Herzog, the principal Israeli error in the initial battles in the Sinai was in the indecision about whether the armoured brigades of the Sinai Division were to concentrate on linking up with the fortifications or on repelling the Egyptian crossing. On the whole, the question of delays in the Israeli operational decision-making during the early phases of the war has occupied researchers' minds up until today. On 5 October, a day before the beginning of the hostilities, General Bar Lev, at that time the Minister of Commerce and Industry and a member of the "War Cabinet", estimated that with the number of tanks in the Sinai the IDF would be able to stop even 1,500 Egyptian tanks, if the tanks were alerted. This never happened. The decision not to deploy the Sinai Division according to the "*Dovecote*" plan was made by General Gonen. According to Rothenberg, it has been suggested that Gonen, who was known as an aggressive fighter, feared that an early deployment of tanks might frighten the Egyptians into calling off their attack. This would have, later on, deprived him of the opportunity to thoroughly defeat the Egyptians. Although this manner of thinking coincides with the doctrinal principle of a decisive victory, the explanation given by van Creveld seems more credible. According to his view, Gonen tried not to unnecessarily provoke the Egyptians because war was not yet certain and when permission to move the armoured brigades of the Sinai Division was finally granted, it was based on the assumption that the Egyptian offensive would begin at 18.00 hours. Van Creveld also gives another explanation which might have influenced Gonen's decision-making. Gonen had dissipated his forces in premature counterattacks in an exercise in 1972. This experience might well have been in his mind when he delayed the use of his reserves.[661]

On the morning of 7 October, the picture of the situation was still very unclear. This, of course, also had also an impact on the Israeli counter-actions.

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[660] Van Creveld (1998), p. 240 and Rothenberg, p. 189, Schiff (October Earthquake), p. 48 and 67, Asher & Hammel, p. 134 and Katz (1996), p. 145.

To maintain the reporting system, both Hofi and Eytan sent their representatives to their sub-echelons.

[661] Herzog (1975), p. 181, Schiff (October Earthquake), p. 26 and 101 – 102, Rothenberg, p. 183, van Creveld (1985), p. 205 – 206 and 208 and Gawrych (1996), p. 32 – 33.

Despite Gonen's difficulties with his division commanders, Gonen failed, according to Gawrych, to act as an operational commander. This problem is revealed in Elazar's biography where Elazar describes his and Gonen's discussion during the first days of the Yom Kippur War as follows: "I think about tomorrow . . . That's my job. Whoever's shooting now, neither the front commander nor I can help anymore. That's a divisional commander's problem. I'm constantly telling him: Shmulik, let's talk about what will happen tomorrow." This gives reason to suppose that instead of thinking about the next and the very next moves, in the "fog of war" Gonen got tangled in tactical issues that only confused the actions of his subordinates instead of allocating them support.[662]

There are numerous criticisms of Elazar's decision to limit the scale of the counterattacks on the 8 October. In theory, this solution violated the operational doctrine of concentrating armour in deep battle despite the demands to wait until all the reserves had arrived.[663] It can, however, be said that using a certain principle of war is usually in contradiction with some other principle. Such was the case within the IDF in the Sinai on 8 October. General Gonen tried to get the initiative with swift counter-moves, which was against the principle of concentrating forces. Therefore, it was the situation that dictated the chosen means and gave them their order of importance. However, initiative had had a central role before the war – as it had also had earlier. In this light, Gonen's decision was in line with these principles. On 8 October, nevertheless, the initiative was in Egyptian hands, though the Southern Command had not yet understood this. In this phase, the lack of infantry and artillery – most of these forces were still in their mobilisation centres – made the plan for a limited counter-offensive, however, highly vulnerable to the Egyptian foot infantry, which was equipped with masses of antitank weapons.[664]

8 October is the best example of "Reversed Optional Control". Traditionally, commanders in the IDF monitored their subordinates' radio nets to keep

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[662] Gawrych (1996), p. 50 and 55.

Elazar's citation is borrowed from Gawrych's *The Albatross of Decisive Victory*. The primary source is Bartov, Hanoch: *Dado: 48 Years and 20 Days*, Ma'ariv, Tel Aviv 1981, p. 389.

[663] Van Creveld (1985), p. 212 – 213, Schiff (October Earthquake), p. 94, Loefstedt, p. 15 and Sharon, p. 296.

According to van Creveld, Gonen favoured a night-time Canal crossing by Adan's and Sharon's divisions, each operating in his own sector and using Egyptian bridges. Generals Sharon and Mendler also recommended a two-division counterattack and crossing on the morning of 8 October. Adan only aimed at taking the initiative away from the Egyptians and blunting their westward advance by a limited counter-attack. According to him, any attempt to link up with the strongholds was bound to fail and therefore the remaining ones were to be evacuated. In this atmosphere Chief of Staff, General Elazar made the decision in favour of a limited counterattack. As many of the Bar Lev Line strongholds as possible were also to be rescued, but only by way of exploiting success. In this phase, the situation on both fronts – which was worse than expected – had little by little crystallised in the General Headquarters. According to Schiff, at this time the Israelis did not yet have a possibility to concentrate forces for a large-scale attack, including Sharon's division.

[664] The Arab antitank arsenal consisted of hundreds of antitank missiles, mostly Soviet-made *Saggers*, and thousands of *RPG-7*s, also of Soviet-origin.

themselves aware of the overall situation. This system was, however, based on an operational concept where freedom of action for the brigades and divisions was broad while the role of the superiors in operational implementation was mainly supervisory. During the Yom Kippur War, the Southern Command still monitored its subordinates. Not so much to supervise them at the time, but to get information that tactical and operational orders could be based on. In practice this meant that, instead of applying the principle of "Optional Control", the Southern Command had adopted the principle of "order tactics", which certainly was not favoured by the experienced division commanders. When orders were given from the rear, tens of miles away from the front line, the picture of the situation was always obsolete by the time decisions were made in the Southern Command. In addition, several human errors in interpreting the messages aggravated the situation still more, although, according to van Creveld, the IDF had a communications system in 1973 that was technically about as good as it could be.[665] However, techniques were not the reason for the failures, they were caused by problems with principles. Finally, this all led to a vicious circle of changes in tasks for the divisions that ended in the total failure of the counter-attack on 8 October.

From 10 October onwards, when the Southern Command had already deployed defensively in depth in the Sinai, "Reversed Optional Control" came, according to van Creveld, to an end. This was the day when General Bar Lev was appointed personal adviser of the Chief of Staff in the Southern Command. According to Gissin, the presence of a top command echelon in the front line enabled the Israelis to not only first centralise the chain of command to achieve some control, but also to return quickly back to the "Optional Control" method. Although the arrival of Bar Lev did not cancel out the personal disagreements over the conduct of operations, Bar Lev represented the generation that had adopted the principles of the "Constant Flow" doctrine and in this way shared the views of his division commanders.[666] In this way,

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[665] Van Creveld (1985), p. 230 – 231.

According to the author, despite the improvement in the communication systems, the Bar Lev Line, as well as the Purple Line, lacked a Position and Azimuth Determination System, a Position Location and Reporting System, and various sensors linked to computers and television screens. These devices might at least partly have eliminated the uncertainty.

[666] Van Creveld (1985), p. 230 – 231 and Gissin, p. 346 and 348

See also Schiff (October Earthquake), p. 156, Dupuy (1992), p. 54 and interview of Doctor, Colonel (ret.) Meir Pa'il.

According to Schiff, Sharon was the father of the theory that the Egyptians would be hit hard if they tried to break into the Sinai. This was against Bar Lev's viewpoint of waiting. In addition, Sharon and Bar Lev also had unresolved old disputes concerning the construction of the Bar Lev Line and how to fight against terrorists. This relationship hampered the chain of command during the whole war and led to several obstinacies by Sharon.

Dupuy tends to see Sharon's influence behind the crossing. While this might well have been true in operational details – "Operation *Gazelle*" was planned during Sharon's tenure as OC Southern Command – the crossing was, nevertheless, Southern Command's operation, supervised by the General Headquarters and the final decision was taken by the "War Cabinet".

According to Pa'il, Bar Lev was an excellent commander who possessed a broad vision of the military art. From a professional point of view, he was also an offensively oriented

simultaneously with the organisational changes and with the re-arrangement of territorial responsibilities, the principles of "Optional Control" were gradually returned to during the holding phase. This is one of the facts that explain the IDF's further success during the counter-offensive.

According to the Agranat Committee report, the principles of war were also misinterpreted during the war.[667] This view is interesting because there were not any priorities assigned to the principles of war in the IDF, it was the situation that determined things. From the viewpoint of General Headquarters, concentration of force – i.e., giving priority to the fronts in turn – was the most important issue while from the point of view of the Southern Command and its divisions, initiative was the most important principle. The realism of the General Headquarters – some might also say the extreme caution – won, not only in this case but also several times later. The right time for a Suez Canal crossing was a source of dispute, as were the questions of whether to take advantage of the success and continue the crossing immediately and finally of how to advance in the Egyptian rear. While it is impossible to prove which principles and actions would have produced the best final outcome, it seems that the Agranat Committee still appreciated more the central principles behind the existing Israeli operational doctrine than those chosen by the General Headquarters, which were less risky but lengthened the war.

The tactical command process is criticised only slightly. Tactically, the Israeli defence can be described as a mobile defence, as already discussed. On the mobile battlefield, time; i.e., the time spent on decision-making, was the most important factor. Therefore, IDF commanders at all levels of organisation placed themselves on the spot of the events during the battles to exert as much personal control as possible over the events and also over the morale of their own troops. This was already familiar to the Israelis, but was – as was the case also in the past wars – to cause a large number of losses among commanders. During the first two days, the nose-heavy command system was also obviously the only way to control the arrival of reserves that were sent to the front in small combinations of companies and sections, even smaller teams were not rare. All reinforcements were taken command of, often not in the original combination, but under command anyway. This principle later enabled the collection of the scattered forces for concentrated counter-attacks.[668]

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commander whose name is often wrongly connected to the Bar Lev Line, which was constructed during his tenure as Chief of Staff.

[667] Investigating Committee of the Yom Kippur War; The Report, p. 1359 – 1360.

[668] Katz (1996), p. 145 and 165 and Asher & Hammel, p. 118 and 135.

The attitude of the IDF commanders to their mission can be seen in Colonel Ben Shoham's words to his superior, C-in-C Northern Command, General Hofi: "What we can do now, we might not be able to do later." Colonel Ben-Shoham lost his life when he abandoned his command centre and moved closer to the battle with his mobile forward command group of one tank and a communications half-track. His tank was destroyed on the second day of fighting, on 7 October.

Nevertheless, at the very beginning according to Katz, the command process was "the scene of a claustrophobic chaos" as one divisional intelligence officer recalled it. At the brigade level, operation rooms, intelligence rooms, and command rooms were full of requests for additional manpower and supply, searches for any new information by the General Headquarters and attempts to direct a desperate fight for survival.

11.6.3. Rehabilitation of operational offence

Zvi Lanir states that the problems of applying the strategy of denial approach; i.e., preventing the Egyptians and Syrians from making any territorial gains, did not rest on any operational concept before the Yom Kippur War because maintaining a deterrence power on the Suez Canal line and on the Golan Heights was beyond Israel's military resources. Amos Perlmutter supports this statement. According to him, the construction of the Bar Lev Line was not a sign of a change in the IDF's military doctrine, but a political misinterpretation of Israel's ability to deter her enemies. As a consequence of this, Israel had to pay a high price in this conflict. Professor Handel goes further still. According to him, during the war Israel achieved its greatest successes in purely defensive tank battles against Syria before 10 October and against the Egyptians on 14 October. If the results of the Yom Kippur War are studied purely from the viewpoint of statistics, Handel's statement is true. According to Major General Uri Simhoni, on the Golan Heights, for example, 2/3 of the Syrian losses were caused during the containment and holding phases while most of Israel's own losses came during the counter-offensive.[669]

On the whole, the statements above seem to be approximately correct. The imbalance between the defensive strategy, the General Staff's vision of offensive operations and the doctrinal demand for decisive victory was clear. However, these opinions neglect some basic facts. First, purely defensive battles had obviously lengthened the war and this was against the existing doctrine that stressed first and foremost the short war concept. Second, while the IDF in the Sinai had enough room for mobile defence, on the Golan it did not. This leads to a speculative question; if the Israelis had not been active what would have happened if their lines had been broken? As a matter of fact,

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See also O'Ballance (1997), p. 115 and 135, Schiff (October Earthquake), p. 172 and Asher & Hammel, p. 182 and 232.
Panic was not absent during the first two days. The commanders' role in preventing this with their own presence was important. In addition, the Israelis established roadblocks to control run-aways and to return individuals and in several cases groups to the front. To anticipate battle stress, teams of physicians, psychiatrists, psychologists, and social workers were dispatched to assist badly mauled troops, one of which was the *Barak* Brigade.

[669] Lanir, p. 30 – 32, Handel (1994), p. 575, Perlmutter (1978), p. 85 and interview of Major General (ret.) Uri Simhoni.

See also Schiff (October Earthquake), p. 264.
According to Lanir, the Israelis were unable to achieve a decisive victory even on the Syrian front. Obviously this is a dilemma of one's viewpoint. At the strategic level, a peace treaty remained unattainable. At the operational level, the IDF pushed the Syrians away from the territory held by the Israelis and crushed a large portion of the Syrian forces. Nevertheless, the Syrian forces were not destroyed.
Lanir also sees that after the Yom Kippur War it was questionable whether Israel could successfully pursue the goals of territorial conquest and destroying the enemy in order to achieve a decisive outcome and maintain its territories in the future anymore. One can agree with this. From the geographical point of view, the Israeli borders were already as good as they could be before the Yom Kippur War. However, it is not necessary to connect these two aims together, during the Yom Kippur War, for example, the conquest of territory was, according to Schiff, secondary. The main aim was to destroy the Arab armies, end the war and maybe in this way also return the deterrence power of the IDF. The implementation of this aim was possible only on enemy soil.

this problem also existed in the Sinai, though it was not so acute. If the Israelis had retreated to the defiles, this would have given the Egyptians a possibility to increase their strength in the Sinai – including an air defence network – which might have increased their hunger and later on might also have lengthened the war. In addition, from the operational point of view, because it was always inferior in manpower, the IDF was trained to seek possibilities on the battlefield and threaten enemy weaknesses, which were often targets in the rear. This all led to use of the indirect approach. This manner of fighting, which was seen as being a precondition for the short war concept, was not possible without offensive tactics. Nevertheless, it is probably a correct conclusion that the pursuit of a decisive victory in the short war concept was costly in this war. Organisationally and technically the IDF was not prepared enough for deep battles.

The framework for an offensive orientation can also be seen in the light of past experience. In 1956 and 1967, the IDF had been successful in offensive operations, and this was also the case in 1973 when the IDF had repelled the imminent threat on Israel proper with offensive operations. Despite the hesitation at the strategic level, however, the IDF operational commanders and the reserve were trained for the offensive. This is revealed in an interview conducted by Geoffrey G. Prosch of Brigadier Kahalani in Military Review in 1979. According to Kahalani "Our doctrine believes that the best defence is a good offence. Most of our training was on how to attack. Our ideology preaches that if you attack, you have more of a chance for success. Israeli tacticians teach that you really can't achieve a victory through defence, so it was not emphasised in our service schools. The defence is very dangerous because it gives the initiative to the attacker." Brigadier Bagnall also tends to see the mental aspects of warfare as being behind the Israeli way of warfare, which was to obtain moral superiority over the enemy by vigorous and sustained offensive action. It can be estimated that in 1973 all these facts were still based on the same preconditions that had been the central pillars behind the doctrine when it was created in the 1950s. According to Kahalani, one of the main problems during the initial phases of the Yom Kippur War was that the IDF was forced to fight a defensive-type war. This gave the attacker the initiative and made the IDF react to where the attacker was making his main effort. This kind of action was attrition, which had to be avoided by taking the initiative back with offensive means.[670]

According to General Simhoni, the operational commanders in 1973 were also tactically still very experienced. Loefstedt estimates that a superior grasp of the operational art was the key to the stunning recovery and operational success of the Israelis. Gissin describes this as decisiveness and confidence in judgments amidst the uncertainties and confusion of battle; i.e., the commanders had intuition and could read the battlefield. This was the main factor that, according to Simhoni, saved Israel during the Yom Kippur War. Gissin also has a theory on this behaviour of the IDF commanders. According to him, there is no doubt that the personality of a commander and his

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[670] Levite, p. 10, Prosch, Geoffrey G: Israeli defense of the Golan. An Interview with Brigadier General Avigdor Kahalani, Israeli Defense Forces, Military Review October 1979, p. 3 – 4 and 6 and Handel (1994), p. 573.

experience will greatly determine the decision and solution he is likely to adopt. Nevertheless, Gissin also admits that the commander's orientation and that of his subordinates is a function of the training doctrine as well. On the Golan, this appreciation of the situation is revealed in the counter-offensive where the use of success after the initial success in the southern part of the front was cancelled because this would have meant a frontal offensive on a highly saturated battlefield while correspondingly the northern sector had advantages for rapidly concentrating forces against vulnerable Syrian targets. With its certain similarities to the operations of the Six Day War, this shows how a tendency towards the indirect approach had been adopted as a part of the Israeli military art, whatever its origin.[671]

The Israeli operational commanders understood the need to engage the enemy in a deep mobile battle on the Egyptian front as well. Particularly important was the ability of the Israeli leadership at the theatre and senior tactical level – i.e., at the divisional level – to read the battlefield and seize the initiative when the Egyptians paused on the bridgeheads on the west bank of the Suez Canal. The swift switch from defence to offence was, according to Loefstedt, a result of the recognition of the vulnerability of the Egyptian operational rear, as their operational armoured reserves were also mostly already deployed on the eastern side of the Canal. Professor Brian Bond – as well as Jac Weller – tend to see this as being the best example of Liddell Hart's ideas of deep penetration, which was aimed at paralysing the enemy command by cutting his communications, threatening alternative objectives and spreading panic. Indeed, it is difficult to estimate what really would have happened if the Israelis had immediately continued to follow up on their success after the crossing. The realities of the situation should, however, be remembered in this question. From the viewpoint of the Southern Command and the General Staff – without enough bridges to increase the strength of the bridgehead – it would obviously have been too risky to continue the crossing

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[671] Interview of Major General (ret.) Uri Simhoni, Gissin, p. 144 and 362, Loefstedt, p. 18 and Asher & Hammel, p. 141 – 142.

On the whole, General Simhoni did not believe in large manoeuvre on the Golan after the Yom Kippur War, unlike in the Sinai. Despite the fact that operational mobility had not been a problem for the IDF since the 1960s, the Golan is too open and has been too full of forces to surprise the enemy with the traditional deep armoured thrusts. In any case, quick changes in the main effort proved to be successful in 1973. This shows that the possibility of throwing the enemy off balance with unusual action still prevails.
See also O'Ballance (1997), p. 350 – 351 and Handel (1994), p. 566 – 568.
O'Ballance states that the top Israeli generals, Elazar, Eytan, Peled, Mendler, Gonen and Adan, formed a team of only average ability, a team that did not always pull together. Handel supports this view. According to him, the middle and higher level IDF commanders presented a mediocre leadership. While the problems in the chain of command seem to have been mostly true, the underestimation of the tactical abilities of the IDF commanders can not be agreed with. From the operational point of view, they were just the "old war horses" who were able to turn the tide of the war. The recovery from the strategic surprise and from the tactical and operational set-backs in a few days shows more than average operational abilities.

before securing the passage to the Canal line despite the fact that this meant the loss of surprise and obviously lengthened the war.[672]

Despite the final results of the war, the Israeli operational doctrine and military leadership is often criticised. Newell states that forced to react to the surprise of simultaneous Syrian and Egyptian attacks, the Israeli decentralised conduct of the war could not adequately cope with the chaos of war. This opinion is partly misleading. First, despite its surprise, the IDF General Headquarters very soon perceived the essentials of the situation and gave priority to the Golan front. At the command level responsibilities were also clear, though the intervention of the General Headquarters probably complicated the command process, especially in the Sinai. Therefore, the conduct of war was more centralised than decentralised, as was also the case between the Southern Command and its divisions. As a consequence of this, the lack of a clear picture of the situation delayed implementation of decisions during the early days of the war. Still, the Israelis were able to recover quickly from their set-backs. This is a clear indication of the fact that the operational doctrine – which included decentralised decision-making – was still sound if only it was followed. For this Newell has a suitable quote: "Writing doctrine appropriate to the conditions and machinery of war is more science than art; executing doctrine in the chaos of battle is more art than science." When interpreting this, the Israeli operational doctrine, which had been created according to the experiences of the past, proved to still be suitable, despite the fact that it neglected several factors like the combined arms principle. After balancing the organisations of the ground forces as well as returning to the original priorities in the tasks of the Air Force, the existing doctrine proved to be sound. In the charge of the veterans of the "Constant Flow" doctrine, the IDF was able to recover in the chaos of the battle and switch swiftly to counter-offensives that transferred the battles away from Israeli-held territory and negated the immediate threat to Israel proper.[673]

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[672] Loefstedt, p. 14 and 16, Bond, p. 268 and Weller, 1975, p. 59.

The Israeli crossing was also a special one on a historic scale. Not even the eastern side of the Canal was totally in Israeli hands. This shows the abilities of Israeli operational commanders to take risks.

See also Sharon, p. 330 and Schiff (October Earthquake), p. 258, 266 and 272.

The dispute over how to continue the offensive on the west bank of the Canal also caused delays. Sharon preferred, instead of the original plan to make the main effort towards the south, to move north. He was able to change his mission and was given permission to push northwards. This dispersed the force that the IDF had on the west bank and might also have lengthened the war. However, Sharon's reasons for moving northwards seem to be justified, especially in the light of the general aims of the deep penetration. They were: First, three quarters of the IDF forces in the Sinai were facing the northern front. Therefore, in Sharon's concept the IDF could have applied greater pressure on the northern Egyptian Army than on the southern. Second, the Egyptian reserves were positioned in front of Cairo, from where they could threaten the flank of a southern advance. Third, the IAF bases were closer to the north which gave a possibility for more effective air support. Finally, the IDF had to move north at some time anyway to widen the bridgehead, this was not possible to the south because the southern flank of the bridgehead rested on the Great Bitter Lake.

[673] Newell, p. 29 and 87.

See also Handel (1994), p. 566 – 568 and 573.

Finally, when estimating the viability of the Israeli operational doctrine and the performance of the IDF, it seems that basically the existing doctrine was sound as soon as it was applied. This, nevertheless, does not deny the fact that Israel's strategy failed because operational success did not guarantee peace. The fact that Israel signed a peace treaty with Egypt a few years after the war was beyond Israel's strategy. This is, however, another matter and is not include among the subjects of this study.

Handel lists the major sources of Israeli military weaknesses and strengths in the Yom Kippur War. According to him, the shortages were too much improvisation, a poor command, control and communication system, overall mediocre middle and higher level leadership, confused military doctrine, poor understanding of defensive warfare, no night fighting, poor staff work, poor in operations in large formations and poor use of time. The strengths were motivation, excellence in air and sea warfare and fast and excellent learning of technological lessons and adaptation. While most of these can be agreed with, the weaknesses are mostly connected to the command system, not to the operational doctrine or the tactical and operational abilities of the commanders.

Handel also states that Israel might have benefited from a totally or partly defensive doctrine in 1973, but failed to plan, train and develop her army for this purpose. The question is how could the Israelis have known of the limited war aims of the Arabs, not to mention whether they even were limited if there was a clause about the possibility of continuing the offence according to the situation in their plans.

NOTIFICATION

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12. AFTERMATH

The Yom Kippur War was not a victorious war for Israel, although the operational achievements were decisive on both fronts. Purely in terms of the numbers of losses per day, the Yom Kippur War was less costly than the Six Day War had been. However, the duration of the Yom Kippur War increased the total losses. Therefore, according to van Creveld, the public felt betrayed, and its belief in the IDF's superiority was thoroughly shattered because the IDF was incapable of achieving a quick victory against its adversaries.[674]

On 2 April 1974, about a half year after the war, the Agranat Committee, which was formed to determine what had gone wrong in October 1973, issued its first, twenty-five-page, interim report of the 1,511-page document that was finished on 30 January 1975. Only twenty years later was the report released in full to the public. At the beginning, the investigation was limited to examining the intelligence factors and the state of Israeli preparedness. On 10 July, the second report, a 423-page document, was completed but only a few extracts from it were made public as well and, according to Rothenberg, only 42 pages were released for publication in 1979. However, it seems that the central conclusions were already known in the latter part of the 1970s, although most of the details were kept secret until January 1995.[675]

According to Katz, primarily intended to appease the disturbed public, the findings of the committee led, instead, to dramatic political and military resignations. Prime Minister Golda Meir and Minister of Defence Moshe Dayan resigned voluntarily. The Chief of Staff was made responsible for the failures of the IDF and the committee recommended that he resign. While in theory this was correct – the commander is responsible for his forces – many of the facts that had been behind the development of the IDF before the war were not under General Elazar's control and, in addition, during the war Elazar showed significant judgment. In a way it seems that Elazar was sacrificed to the public. It was also recommended that Major General Gonen resign. According to the report, he had shown poor tactical judgment. In addition, the report found – as already discussed – shortages in the chain of command, in organisations, in technical preparations, and in tactical fighting principles on the missile-age battlefield. These finding were to cause great changes in the IDF before the 1980s.[676]

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[674] Van Creveld (1998), p. 243 and 247 and Dupuy (1992), p. 333 and 609.

According to Dupuy, Israeli losses in killed, wounded and prisoners or missing were a little bit more than 12,000 in the Yom Kippur War. In the Six Day War, this number was 5,500. Losses per day were 639 in the Yom Kippur War while they were 917 in the Six Day War. Arab losses in the Yom Kippur War totalled almost 37,000; i.e., three times those of the Israelis.

One of the results of the Yom Kippur War was also that a research institute called the Jaffee Center for Strategic Studies was opened in Tel Aviv University to study defence issues. Before that Israel's defence community had been too proud to consult outside advisers.

[675] Katz (1996), p. 195, O'Ballance (1997), p. 272 – 273, Rothenberg, p. 212 and Investigating Committee of the Yom Kippur War; The Report.

[676] Katz (1996), p. 195 and Rothenberg, p. 212 – 213.

Zeev Schiff estimated after the Yom Kippur War that despite all Israel's victories and growing military power, Israel could not and can not deter her enemies from attacking, which meant that – as long as there were no peace treaties between the parties – Israel had to prepare for the next war. This was what actually happened. With the withdrawal from the Sinai in the late 1970s, Israel returned to the old principle of "defence through attack", as Lanir puts it. At the strategic level, Israel had neither territorial demands nor aggressive intentions against her neighbours' armed forces, but if she was to be an object of aggression, at the operational level the defence was to be implemented with offensive means. This had been the case since the 1950s and it was what the IDF was trained for. However in this context, the seizure of enemy territory was still included in the doctrine, though more to be used as a bargaining card than to enlarge the battlefield. This shows that the current boundaries were seen as being safe enough for Israel proper.[677]

According to this revised concept, Israel continued to arm herself, and at an accelerating pace. This also shows that the strategy of denial approach had remained unchanged; i.e., if deterrence did not work, the main aim was to pursue a decisive victory. The only thing that changed was the interpretation of the concept of pre-emption. After the Yom Kippur War, the Israelis realised that it was not possible to speak of a large scale pre-emptive offensive – like that of the Six Day War. Therefore, according to Schiff, at best it was possible to speak of a pre-emptive strike, or of maintaining a strategic force to guarantee a second strike if the Arabs started a war. Nevertheless, according to the Agranat Committee report, the enemy antiaircraft missile networks would have to be suppressed before mobile action could begin. In a way this also shows the tendency to maintain the existing doctrinal principles of first acquiring aerial supremacy for further operations.[678]

To avoid possible surprises and to delay an Arab first strike in the future, the IDF more than doubled its standing army from 75,000 to 172,000 by 1982. In the meanwhile, the strength of the mobilised reserve was also increased by some 60 percent from 275,000 to over 400,000. The Agranat Committee had also advised that Israel would have to mobilise as soon as a major threat was detected. Therefore, the demands for the time that was needed to mobilise were tightened. According to Gabriel, by moving mobilisation depots and stores closer to the potential combat areas and by streamlining and

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[677] Schiff (October Earthquake), p. 310 – 311 and 314 and Lanir, p. 36.

[678] Schiff (October Earthquake), p. 310 – 311, 315 and 318, Rothenberg, p. 212 – 213, Avidor, p. 71 and van Creveld (1998), p. 253 – 254 (Original Inbar, Efraim: Israeli Strategic Thinking After 1973, Journal of Strategic Studies 6:I (March 1983), p. 37 – 57).

Schiff also estimated that time was not on Israel's side because in the long-run it was obvious that Arab military preparations would get better. Therefore, she had to make greater efforts to achieve a true peace.

See also Katz (1996), p. 195 and Gawrych (1996), p. 79.

Several researchers have maintained that there were numerous changes in the IDF's doctrine. However, a closer study reveals that this is a question of the substance of the definitions. Katz and Gawrych both, for example, state that there were significant changes in the IDF's doctrine. While Gawrych doesn't analyse these items, in Katz's interpretation the changes were mostly technical, tactical and mind-set modifications connected to the combined arms principle. There is no question of a change in doctrinal principles.

computerising the call-up system of the reserves, on average, the IDF needed 24 hours to mobilise its reserve to 60 percent strength and 48 hours to come to full strength after the improvements. The new system was tested in the 1975 and 1976 manoeuvres and the IDF was, according to Rothenberg, able to get the majority of its combat units ready in 48 hours. In addition, along the Jordan River and on the Golan Heights the IDF revived, according to van Creveld and Schiff, the *Haganah*-style territorial forces of older reserves, though van Creveld states that rather little came of this. However, according to Gabriel, 12 territorial infantry brigades were established in the late 1970s and early 1980s and investments were also made in building strongholds, minefields and anti-tank ditches to hold off the initial assaults and to buy time for the mobile main forces.[679]

The force structure was also revised. The main changes concerned the balance between different arms and the modernisation of equipment. The development was started under the control of Major General Adan. It is interesting to note that despite the bad experiences in using tanks during the Yom Kippur War, the number of main battle tanks was doubled to some 3,600 – 3,800 tanks between 1973 and 1982. This means that the number of armoured brigades was also doubled. The number of armoured fighting vehicles almost tripled from 3,000 to 8,000 in 1982. Some 4,000 of these were modern *M-113*s which means that mechanised units that were attached to armoured formations were then really mechanised – not only motorised – to keep pace with the tanks and to give them cover, at least in theory. According to van Creveld, this meant the jettisoning of the all-tank doctrine. Inside armoured divisions, each armoured battalion was provided with a company of APC-riding infantry.[680] The strength of the IDF in 1982 can be seen in Appendix 20.

When the development programme was started, General Tal also saw the need for mechanised infantry and other supporting arms although in his concept the tank was still "the core and backbone of the armoured formations, all of whose arms are mobile and some of them also armoured." However, it can be seen from this statement that the tank was still the decisive weapon of land warfare to Tal while all other arms were integrated into the formation in order to support the tank. The main purpose of the armoured forces was to end wars quickly by deep penetration of the enemy while conquest of terrain wasn't so important anymore. In a way, the still existing dominance of tanks supports Doctor Pa'il's views that up to the 1990s a large percentage of Israeli officers did not understand that mobility on the battlefield was not only the mobility of tanks but also the mobility of the supporting arms. However, this

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[679] Rothenberg, p. 212 – 213 and 215 – 216, Gabriel, p. 21 and 62 – 63, Cordesman & Wagner, p. 110, van Creveld (1998), p. 253 – 254 and Schiff (October Earthquake), p. 316 – 317.

According to Gabriel, in 1982 Israel was able to mobilise a total ground force of 450,000 in 24 hours!

In 1982 the IDF could, according to Gabriel, mobilise 33 armoured, 10 mechanised, five paratroop, 12 territorial infantry and 15 artillery brigades.

[680] Van Creveld (1998), p. 254 and 256, Gabriel, p. 21, Cordesman & Wagner, p. 54 – 55 and 111, House, p. 179.

statement can only be evaluated through the tasks of the different arms, pure numbers don't reveal the imbalance between arms. Nevertheless, the experiences of the 1982 War prove that there is some truth to Pa'il's opinion.[681]

In addition, other arms were also modernised and equipped according to the demands of mobile warfare, the most important of them being artillery. Mortar units that had been dropped from the organisations were re-attached to the tank battalions to give them immediate fire support. The IDF's artillery more than tripled its self-propelled guns from 300 to some 950 by 1982, while the calibre also increased. After the Yom Kippur War, the IDF also returned to the old principles of dug-in artillery. Self-propelled armoured artillery pieces were seen as having more battlefield durability in solid firing positions. The re-adoption of this concept also shows – despite the increased ability to follow tanks in mobile operations – that since 1973 Israeli operational principles more and more stressed the primacy of firepower instead of movement. However, one should remember that the defensive methods of deploying artillery was mainly a consequence of the static "no peace, no war" situation on the northern borders of Israel after the Yom Kippur War. In addition, after the Yom Kippur War the Israelis also concentrated – in addition to the quantitative and qualitative modernisation of the Artillery Corps – on training all officers in artillery fire control methods regardless of their arm.[682]

In addition, to correct the deficiencies in maintenance and preparation, the new Inspectorate for Maintenance was set up in 1975. One cut was also made; organic reconnaissance battalions were taken away from the divisions. According to van Creveld, it was expected that this task would be carried out by new technology. In light of the experiences of the 1982 War in Lebanon, however, many officers at the operational level regarded this move as an error.[683]

The combined arms doctrines were tested in several large-scale manoeuvres in the Sinai. In 1975, the manoeuvre plan called for the attacker to break through a strongly defended zone. According to Rothenberg, this offensive was in many ways reminiscent of Sharon's attack in Abu Ageila during the Six Day War. It was started at night and when the enemy was thrown into confusion and breaches had been made, armour passed through the gaps to exploit the success in the enemy rear. This manoeuvre shows that the IDF had not abandoned their tanks even with the hard lessons of the Yom Kippur War, because they had proved to be suitable for Israeli conditions. According to Brower, during the Yom Kippur War tanks had proved the fact that using tanks is "people-cheap" and "material-expensive". Despite the large numbers of lost tanks, they saved human lives. However, while the Sinai and

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[681] Rothenberg, p. 214 and 217, Tal, p. 37 and interview of Doctor, Colonel (ret.) Meir Pa'il.

[682] Gabriel, p. 21, Mizrachi, p. 9 – 10, Movshovitz & Petreanu, p. 19 and Ben-Dor, Charles: Artillery's role in the North, IDF Journal IV, NO. 3, Fall 1987, p. 35.

[683] Van Creveld (1998), p. 254 and 256, Gabriel, p. 21, Cordesman & Wagner, p. 54 – 55 and 111 and House, p. 179.

Golan might have favoured the use of deep armoured thrusts, this was not and is not the case on all the other fronts facing Israel.[684]

Jac Weller has examined the role of foot infantry during the Yom Kippur War. According to him, the lack of foot infantry in the Yom Kippur War showed that the mechanised infantry also needed foot mobility.[685] On the whole, however, as the numbers for the change clearly reveal, the modernisation programme was conducted at the expense of the numbers and training level of foot infantry. The manoeuvres in the Sinai also clearly demonstrate that the IDF prepared to combine the strengths of the Six Day War-period IDF and the experiences of the Yom Kippur War without trying to analyse the future battlefield in greater detail. The principles that were learned during the Yom Kippur War and refined in the exercises after the war, proved, however, to be ineffective during the "*Peace for Galilee*" campaign in Lebanon in 1982. Neither large encirclements nor the principle of using artillery to wear down enemy anti-tank defences were possible in 1982. The main experience of the Lebanon War was the need for foot infantry to cover the armoured spearheads in built-up areas, in forests and in mountainous terrain. Although this war was not a typical conventional war, the shortage of trained foot infantry was revealed in mountainous terrain against the Palestinian guerrillas. Therefore, in a way, Israel, which drew on the experiences of the Yom Kippur War for the bases of the development programme, still prepared for the last war. The IDF that was in existence in 1982 would certainly have been superior under the conditions of the Yom Kippur War. In mountainous Lebanon against guerrilla patrols and Syrian armour, the Israeli tank army was only partly successful. This development magnificently illustrates how difficult it is to prepare for future wars.

Connected to the facts mentioned above, there are quite a few statements along the lines that with the change of the command generation that had experienced all Israel's past wars flexible thinking also vanished. However, the 1975 manoeuvre testifies to the fact the IDF had not lost its pursuit of mobility, although after the Yom Kippur War the tendency of favouring firepower above movement was growing. According to Gelber, this was more a result of the saturated battlefield and also a consequence of lessening one's own losses. Nevertheless, it seems that there is some truth in the statement that firepower

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[684] Rothenberg, p. 217 – 218 and Brower, p. 37.

See also Avidor, p. 71.
Avidor based his 1978 article on the Israeli tendency to still base the IDF on armour after the Yom Kippur War so that "as long as there was no significant technological change in the tools of war, the strategy and tactics will remain similar in principle to those of previous wars as far as the operation of the mobile, armoured force is concerned." In 1978, this statement might have seemed rational and as a matter of fact, it was, from the viewpoint of conventional war. The next Israeli war was, however, not conventional and the conditions were also almost totally different from what the IDF had prepared for.

[685] Weller, 1975, p. 59.

Weller also predicted in 1975 that the ratio of APCs to tanks would increase to at least 1:1. In addition, – and as a consequence of the latter – he also forecasted that mechanised infantry would continue to fight from its vehicles. Both of his predictions were to come true in 1982. However, the losses of mechanised units forced them to dismount, but without training and experience in this type of fighting the results were rather poor.

has replaced movement. Kadish and Shai recall the experiences of the 1982 War. Kadish mentions that regular soldiers were prone to use firepower and technical means while reserve soldiers, who represented a wider age group, were more imaginative and flexible. This is a dilemma that all advanced armies have faced on the modern battlefield. In Israel according to Shai, the IDF woke up to this reality in the 1990s and since then has again emphasised to its officers the importance of understanding the principle of the maintenance of aim and the "mobility of mind" in addition to purely physical mobility.[686]

Two bigger organisational changes were also carried out; the creation of an army corps formation, *Gayis* or *Gayessot*, as the Israelis call it and the establishment of the Ground Forces Command. According to Rothenberg, the army corps was first time introduced late in 1975 and then tested during the manoeuvres in 1975 and 1976. Like the brigades in the 1950s and the *Ugdah*'s later on, the composition of each corps varied according to its mission and as a matter of fact corps were also established according to need. In the "*Peace for Galilee*" operation, the IDF used army corps. The reasons for maintaining non-fixed organisations for corps were the same as before, to retain maximum flexibility.[687]

The general explanation for the command problems during the Yom Kippur War was that they were a consequence of the lack of an operational echelon above the division and below the command level. After the Yom Kippur War, it was still seen that regional commands were not able to carry out peace-time activities, mobilise troops in the case of emergency and be in charge of operational forces during wartime. While this might be true in theory, the command problems during the Yom Kippur War can not only be explained by organisational deficiencies. During the early phases of the Yom Kippur War, Israel had no more operational echelons than during the Six Day War. In any case, after the creation of the corps command, the existence of this echelon has divided the opinions of past and present Israeli military leaders. The most common opinion has been that the army corps echelon lengthened the chain of command more than made it clearer. Professor Gelber is the most critical. According to him, the establishment of the army corps was a consequence of the Southern Command's inability to lead two specific divisions – Sharon's and Adan's – during the Yom Kippur War. This is why the Southern Command was put under supervision of General Bar Lev and divided in two. According to General Shomron, the division of the Southern Command was made to concentrate forces in a certain direction. It seems that both opinions are partly right. It is obvious that during the Yom Kippur War the division of the Southern Command in two before the crossing and the establishment of new divisions embodied the need to decrease the number of subordinates at both levels. In addition, the aims of facilitating the command and control process and making

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[686] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber and Professor Alon Kadish and discussions with Doctor, Colonel (ret.) Hanan Shai.

[687] Ibid., p. 215, Lorch, p. 59 and Gabriel, p. 75.

the concentration of forces in different operational directions possible can be seen.[688]

General Simhoni shares General Shomron's opinion that the army corps was established for facilitating the command chain while divisions maintained their independence. Instead, according to Adan, the army corps was unnecessary because at the command level there usually is only one corps. According to him, this organisation would only be justified if some special arms were concentrated at corps level. Nevertheless, during operation "*Peace for Galilee*" for example, the Northern Command was in charge of an army corps of five brigade/division-size components and was, in addition, directly in charge of five other brigade/division-size elements. This total strength would obviously simply have been too much to control for one command echelon. Simhoni also sees that after the creation of the army corps, one command echelon was too much in the IDF, though Simhoni does not name the exact one and argues his case more for logistic reasons; the growth in the number of command echelons also lengthened the logistic chain. This also seems to be true. Despite the creation of the army corps, brigades also kept, according to Shomron, their status of being used in independent operational tasks.[689]

In the atmosphere of these disputes, the army corps didn't prove to be what it was exactly expected to be. According to Gelber, the army corps command became a big echelon – almost equivalent in size to a command, but without true responsibility – that was not able to co-ordinate mobile operations like Rommel's staff had been able to do during WW II in the Western Desert. Therefore, it seems that more important than the question of should the army corps exist or not is the question of how to use it: only to co-ordinate orders between divisions and a command or to also accord it independent decision-making power. This manner of thinking, sharing the General Staff's operational responsibility with commands, and later with corps, seems to have been quite strange to the Israelis, and operation "*Peace for Galilee*" was not an exception in this regard. According to van Creveld, the IDF had also become at this time, despite the growth in its size, top-heavy with massive operational staffs.[690]

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[688] Interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber and Lieutenant General (ret.) Dan Shomron.

[689] Interviews of Lieutenant General (ret.) Dan Shomron, Major General (ret.) Avraham Adan and Major General (ret.) Uri Simhoni.

[690] Interview of Professor, Lieutenant Colonel (ret.) Yoav Gelber and van Creveld (1998), p. 247.

The tendency towards centralised superior command might have been a consequence of the disputes between Ben-Gurion and his subordinate commanders over the final aims of the War of Independence. In any case, excluding operations during the War of Independence, it seems that the commands have not had any true responsibility for operations. The General Staff has been indirectly in charge of operations, using the commands only to control the orders given.

Gelber provides an illuminating example of the independence of the army corps. According to him, Rommel didn't need a colonel to supervise whether every sergeant did his job. The principle of *Auftragstaktik* worked better with reliance.

See also Gabriel, p. 22 – 23.

The establishment of a Ground Forces Command, MAFCHASH (*Mifkedet Kochot Ha-sadeh*, Ground Forces Headquarters) came into being only after operation "*Peace for Galilee*". This organisational and functional change had already been a recommendation of the Agranat Committee, but it was only in 1983 that the IDF brought together the Infantry, Artillery, Armour and Engineering Corps and moved to a unified command structure of the three services with each commander responsible to the Chief of Staff for day-to-day operations. Up until this point in time, the Chief of Staff had maintained two "hats", as General Shomron puts it. There were two main reasons for the change and both ultimately derived from the Yom Kippur War. First was the aim of concentrating all services under one single commander during time of war. In light of the experiences of the 1973 War, the Chief of Staff could not concentrate simultaneously on being in charge of both the ground forces and the defence forces. However, this change resulted in rather slight changes because during a war ground forces formations were to be attached to the territorial commands. Therefore secondly and more important, the development of the ground forces became the main task of MAFCHASH. A balanced development of different arms required an inspectorate to supervise this task. Nevertheless, on the whole, the Ground Forces Command was not established without disputes. One of the main opponents was the first Chief of Staff after the Yom Kippur War, Lieutenant General Mordechai Gur. According to Gur, the creation of MAFCHASH cancelled out a lot of ground forces independence, decentralised the command system, duplicated staff efforts and removed the Chief of Staff from supervising training and combat readiness.[691]

In a way, Gur's statement seems to be exaggerated, though without proper staff orders his statement might well come true. In practise, however, the ground forces had dominated the other services up to this time. From the Air Force and Navy viewpoints, this had meant continuous fighting for their interests. Therefore, the IDF had lost its ability to conduct joint efforts to some degree as well. Thus, the establishment of MAFCHASH meant more a real ability for joint operations, even at levels below the General Staff, without mentioning the balanced development of the arms of the ground forces. In addition, the creation of MAFCHASH changed the organisation of the General Staff. In this context, a department that was responsible for research and

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According to Gabriel, since 1973 commands have grown and their role has expended. When speaking of peace-time duties, this can be seen as having been true. Territorial commands have even begun to develop doctrines specific to their own areas, almost on an alarming scale because specialisation might weaken the training level of the reserve to fight in different battlefield environments. However, during wartime there is no proof of the increased independence of the commands, not even during the 1982 War.

[691] Investigating Committee of the Yom Kippur War; The Report, p. 1461, Abramowitz, Jeff: The Evolution of the Ground Corps Command, IDF Journal Vol. III, NO. 3, Summer 1986, p. 8 and 12, Drori, Amir: "We are Responsible to Develop Further", IDF Journal Vol. III, NO. 3, Summer 1986, p. 16 – 17, Abramowitz, Jeff – Weinraub, Jeff: The IDF in '86. Interview of Lieutenant General Moshe Levy, IDF Journal Vol. III, NO. 2, Spring 1986, p. 7 – 8 and Rothenberg, p. 215.

developing tactics, and doctrine as well according to Gelber, was also established in the Ground Forces' Staff.[692]

There were not many changes in the Navy in the years after the Yom Kippur War. Israel had succeeded rather well on her sea flanks, the naval doctrine had proved to be suitable as was the case with the technical development of the Navy before the war. Instead, the Air Force underwent rather significant changes, though they were mostly of a technical nature. According to Cohen and Gissin, the first lesson learned was that in order to minimise the damages of a surprise attack, the IAF could not rely on pre-emption but had also to develop a counter-offensive capability under conditions where a first strike was not possible. According to Gissin, this required a large and modern air force. In this concept, a counter-offensive capability meant the ability to first suppress enemy air defence networks before a counter-offensive of the ground forces. Logically – if we do not speak of a first strike – this is not far from the previous principle of destroying enemy air force components on the ground before starting ground offensives. Therefore, it can be said that the priorities of the tasks of the IAF were only updated for the missile era after the Yom Kippur War. Instead, technically the IAF was modernised. In purely numerical terms, the number of combat aircraft increased some 25 percent up to 1982. However, qualitatively the growth was much greater. Up to 1982, the Israelis had reconstructed their command systems and battle management technologies – including the creation of an autonomous IAF branch responsible for ground intelligence – bought sophisticated new planes, adapted electronic warfare systems, made advances in remotely piloted vehicles and sensor systems and purchased airborne warning and air control systems in order to manage its air battles.[693]

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[692] Ben-Dor, Charles: Ground Forces Headquarters. Combined Forces at Every level, IDF Journal 17, Summer 1989, p. 6 – 8, Abramowitz, p. 12 and interviews of Professor, Lieutenant Colonel (ret.) Yoav Gelber and Major General (ret.) Uri Simhoni.

Simhoni, who has been one of the chiefs of the department that was responsible for researching tactics, compares this organisation to the U.S. Training and Doctrine Command (TRADOC).

Also interviews of Lieutenant General (ret.) Dan Shomron and Major General (ret.) Adan and discussions with Doctor, Colonel (ret.) Shai.

Shomron and Adan both saw the advantages of MAFCHASH rather than the possible weaknesses. General Shomron was the first Commander-in-Chief of the ground forces and Major General Drori his successor. Lieutenant General Levy was the Chief of Staff when the Ground Forces Command was created in the General Staff.

Shai also saw the advantage of balancing the development of different arms in the creation of MAFCHASH. Up to this time, the past decades had been more or less dominated by armoured forces. This had already begun during Laskov's tenure as Chief of Staff. This had not only meant loss of the combined arms advantage but also the loss of joint services command. Gradually the Armoured Corps had come to comprise the defence forces, supported by air and naval arms.

[693] Cohen, p. 397 and 425, Gissin, p. 106, 112 – 113, 128, 415 – 416, 422 – 423 and 432, Rothenberg, p. 212 and 221 – 222, Cordesman & Wagner, p. 16, 11 – 113 and 118 and The Military Balance 1981 – 1982, The International Institute for Strategic Studies, London 1981, p. 52.

According to Cordesman and Wagner, the IAF had 476 combat aircraft and no armed helicopters in 1973. In 1982, the numbers were over 600 combat aircraft of which 275 were

Gissin sees the introduction of Airborne Warning and Control System (AWACS) planes as a continuation of the delegated decision-making process in the IAF. The Yom Kippur War, as well as the Vietnam War a little bit earlier, had clearly demonstrated, according to Gissin, "the deficiencies of centralised command systems in a heavily saturated hostile environment of surface-to-air missiles and large numbers of fighter aircraft on both sides within a confined time and space framework." Therefore, Gissin sees the use of AWACS aircraft in the IAF – however technologically advanced – as being more rooted in the operational command and control doctrines than in technologies. AWACS systems also enabled the IDF's traditional principle of "command bypassing" in modern warfare, where all formations in the air were still to be under the direct control of the commander of the air force and his designated deputies despite the command chain on the ground. One central reason for the purchase of the AWACS planes was also the fact that Israel had only a little ground radar and it was vulnerable.[694]

Helicopters were kept under the command of the Air Force despite the tendency to develop combined arms combinations. This was mainly for logistical reasons, but it can be expected that there was no need to change the existing concept: the principles of co-operation were already adopted in the early 1960s. In the meantime, the airlift capability of the IAF also rose with the purchase of the new *C-130* transports. In 1976, in the context of the Entebbe rescue operation, the IAF Commander-in-Chief, Major General Peled, suggested that paratroopers be sent to conquer Uganda or at least the city of Entebbe. While the first aim might have been an exaggeration, this reveals, however, that the IDF also had – in addition to the theoretical ability to conduct at least two battalion-size heliborne operation in the vicinity of Israel – long-range airborne capacity, possibly even for a brigade-size airdrop. On the whole, it seems, however, that there was no longer any room for traditional paratroop operations in the Middle Eastern environment, their fate has been the same as cavalry's in the first half of the 20th century, as Simhoni puts it. Instead, Simhoni estimates that the role of heliborne landings is growing; not just among paratroopers, but also for other infantry units. In addition, the first armed helicopters entered service in the IAF at the end of the 1970s, including tank-hunting helicopters for whom combat theories were, according to Cohen, created in separate and joint exercises with the ground forces. Despite this fact, the role of attack helicopters in operation "*Peace for Galilee*" was slight, obviously because of their vulnerability to shoulder-to-air missile patrols in the mountainous terrain. Besides as a consequence of the small size of the IDF's area of operations, helicopters and tanks can be seen as being rivals in tank-hunting missions. In this concept tanks, which can stay on the battlefield the

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attack capable, and 42 armed helicopters in addition to a transport force of over 40 helicopters and some 50 fixed-wing planes.

[694] Gissin, p. 106, 112 – 113, 128, 415 – 416, 422 – 423 and 432.

Later, when the AWACS systems were in use in the IAF, the airborne systems were primarily used as a relay communication post between aircraft and the ground control station. This technical implementation was a consequence of the IAF's operational style and tactics of low level penetration and did not lessen the tactical authority of the airborne systems. Originally, the Americans recommended the AWACS systems to the IAF, obviously also for commercial reasons.

whole time – without refuelling for example – are, according to Simhoni, more suitable for this task.[695]

It should be remembered that after the Yom Kippur War the guerrilla problem that was connected to the events in Lebanon rose steadily. This forced the IDF to develop means to cope with this threat as well. It also forced the IDF to use conventional troops to support the operations of special troops, the most prominent being operation "*Litani*" in March 1978. While these operations gave little to the IDF from the viewpoint of conventional warfare, they, however, provided experience in joint operations on a smaller scale as well as some expertise in fighting in mountainous terrain against guerrillas. However, the guerrilla problem remained and, in addition, it seems that the experiences gained from fighting were not taken as seriously as could be supposed. Despite the fact that armoured and mechanised forces joined operation "*Litani*", the over-confidence in the omnipotence of mechanised forces continued and the real problems were revealed only in 1982.[696]

Aside from in Israel, the experiences of the Yom Kippur War were also interpreted elsewhere much more than the previous wars of the Middle East. There are at least three reasons for this. First, when speaking of the extent, duration, number of troops and intensity of the past wars of the Middle East, the Yom Kippur War is generally seen as the only real war in this list, the others had been more or less campaigns.[697] Second, the Yom Kippur War was the first conventional war in the missile era, other than the Vietnam War which was partly a guerrilla and counter-guerrilla war from the military point of view. Third, almost all the most modern American and Soviet weapons were used by the opposite sides. This provided an opportunity to study their performance. In addition, Israel fought successfully in a low defensive belt against a superior enemy on the Golan Heights. This corresponded to the picture of warfare that was expected in Eastern Europe in fighting between NATO and Warsaw Pact forces.

The United States and the United Kingdom are obviously the countries that learned the most. According to Paul Hardy, the Yom Kippur War caused a reordering of the priorities of the U.S. Training and Doctrine Command (TRADOC). Shortly after the war, the Americans established a Special

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[695] Cordesman & Wagner, p. 113, van Creveld (1998), p. 267, Cohen, p. 473 – 476 and interview of Major General (ret.) Uri Simhoni.

[696] Katz (1996), p. 198, Katz (1989), p. 140 – 142 and Rothenberg, p. 227 – 228.

During operation "*Litani*", the IDF used, in addition to special forces like *Sayeret Golani*, *Sayeret Matkal* and Border Guard *Ya'Ma'M*, their regular brigades, including paratroopers, the *Golani* Brigade, and the 7th and 188th Armoured Brigades.

[697] Sharon, p. 76.

See also Gabriel, p. 179 – 181.

The intensity of the fighting in 1973 can be seen in the numbers of battle stress casualties as well. In 1973, the IDF undertook a program to prevent and treat battle shock. Trained battle psychologists were assigned to every brigade and division and made responsible for monitoring the morale and stress levels of combat units. Methods for measuring combat morale and confidence were also developed so that it was possible to survey forces through a questionnaire, transmit the results to rear headquarters for a computer analysis and report to commanders in less than 24 hours. The object was prevention.

Readiness Study Group to identify and assess specific operational problems that would probably have an effect on the Army and to recommend improvements to overcome those problems on a future battlefield. According to Shai, the main aim – which was a consequence of the Yom Kippur War – was to find balance between arms and services. Rothenberg goes further still by stating that the battles on the Golan Heights were cited in official U.S. Army publications as a model of how "to fight outnumbered and win". It seems that there are several facts that support this statement. First, according to Hardy, the principle of active defence was a brainchild of Generals William Depuy, the Head of TRADOC, and Donn A. Starry, commander of the U.S. Armoured School in Fort Knox. They saw the Israeli way of fighting during the Yom Kippur War as representing just the combat doctrine that could be applicable to Europe. Second, although the Israelis had also had initial deficiencies during the Yom Kippur War – especially in the use of the Air Force and in balancing the armoured forces, infantry and supporting arms (equivalent to the problems that the German *Panzergrenadiers* had experienced during the later years of WW II) – the Israeli solution of adapting the existing organisation and equipment to extend the battlefield convinced the Americans of the fitness of active defence. Finally, this led to the birth of the "AirLandBattle" doctrine and to its European application, the "Follow-on-Forces" doctrine where Nigel T. Bagnall, who wrote his study of the Israeli art of war, played a central role.[698]

While the Yom Kippur War served as an example of modern conventional warfare, the Israelis did their own analysis and modifications. However, the IDF's success in operation "*Peace for Galilee*" clearly shows how difficult it is to estimate the next war correctly and to prepare properly for it at both doctrinal and purely practical levels. IDF Chief of Staff, General Mordechai Gur's lecture early in 1978 sheds light on this problem. He compares the development of the military art to a missile as follows:

> " A proper command system might be compared to a ballistic missile. A good missile will reach its objectives while overcoming those forces, the weather, wind, etc. It is built on the assumption that unforeseen forces will affect its flight; and it must be able to identify and overcome those

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[698] Hardy, p. 53, 65 – 66, 77, 142 – 143, 146 and 173, discussions with Doctor, Colonel (ret.) Hanan Shai, Rothenberg, p. 188, McInnes Colin: BAOR in the 1980s, Defence Analysis 4/1988, p. 383 – 385 and Farndale, Martin: Operational Level of Command, RUSI-journal, 3/1988, p. 26.

Depuy was deeply interested in German ideas about *Panzergrenadier* tactics after the October War. According to Hardy, that war had clearly demonstrated the need for close co-operation between tanks and infantry to defeat enemy anti-tank infantry. The Israeli solution of allowing their infantry to fight from their APCs as long as possible was consistent with Depuy's beliefs about combined arms and suppression. In addition, the German operational doctrine HDv 100/100 published in September 1973 – before the Yom Kippur War – was used by Depuy, Starry, and their staffs.

Later in March 1981, a year before the "AirLandBattle" doctrine (FM 100-5) was published, General Starry wrote an article *Extending the Battlefield* in *Military Review*. Although the Yom Kippur War is not specially mentioned in this article, the Korean War and Middle Eastern wars where the Soviet operational concept, tactics and equipment had been used, were in the background of Starry's ideas. See Starry, Donn S: Extending the Battlefield, Military Review, March 1981, p. 31 – 50.

> forces during that flight. A controlling mechanism is needed, correcting its course when necessary, but without causing the missile to stop. Only when the missile is far off course, however, is its self-destruct mechanism activated. But only in case the missile is clearly not about to reach its target. ... A proper command system should be able to set itself goals, and then strive to attain those goals in spite of the clear realisation that things will go wrong, but also in the confidence that, when they do go wrong, the system will be able to overcome the obstacles... Such a system might operate in two different ways. The first is to plan everything in detail, then start going. The second is to lay down general objectives only and to start going at once. The IDF normally takes the second of these ways. ... A proper command system is based on three principles, namely (a) a clear definition of the objectives to be attained; (b) thorough planning; and (c) a proper order of priorities."[699]

This citation describes the past of the IDF rather well as well. The development of the art of war is a complicated process involving numerous issues. This complexity can be controlled only with clear goals. In Israel, the red thread has been mobility. The Israeli Defence Forces have handled the pursuit of this aim at the operational level of warfare relatively well. However, a war is an entity composed of both political and military matters where complete victory – remembering the relativity of this word – can be reached only at the political level. Today, in the year 2001, the Middle East is still in the throes of low intensity conflict.

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[699] This lecture was originally given in Hebrew. The English translation is made by Martin van Creveld and can be seen in his book Command in War, p. 194 – 195.

Conclusions

The purpose of this study has been to examine the background and reasons behind the search for operational mobility within the Israeli Defence Forces. This study covers the years from the late 19th century up until the late 1970s. During these years, the self-defence of the dispersed Jewish settlements in Palestine took shape as modern armed forces. Since the late 1930s, already before the establishment of the Israeli Defence Forces, the most central issue behind the development of the military art has been the pursuit of mobility. For the Israelis, this has been a means of compensating for certain weaknesses, the most important of them being geographical vulnerability and inferiority in manpower.

The concept of operational mobility is not new. It can be dated back to the time when a caveman surprised his enemy instead of meeting him club-to-club. In the 20th century, the best known theorists behind the concepts of operational mobility are Sir Basil Henry Liddell Hart and Major General John F. C. Fuller, the most known practitioners have been the German *Panzer* Generals during WW II and the Israelis since WW II. In light of military theories ranging from the Chinese Sun Tzu up to the 20th century theorists and practitioners, the Americans created a theory called Manoeuvre Warfare Theory in the 1970s. This is the reason why the development of the Israeli military art is also connected to the theory of manoeuvre warfare in places. The IDF's operational principles since the late 1930s can be seen as paralleling the classic thoughts behind operational mobility as well as the theory of manoeuvre warfare. This shows that the Israeli military art has not developed separately from developments elsewhere, but is in its broad outlines only an evolution of past theories and experiences. Nevertheless, the views of the role of classic military theory differ in Israel. Some scholars and soldiers, who tend to see this question in a practical way, stress the importance of officers in the young IDF in the Israeli military art. The other side is that group that tends to see the influence of the theorists of the military art as significant to the background of the development of the IDF. It seems that the truth lies somewhere in between.

The central aims behind operational mobility and manoeuvre warfare are the same. According to manoeuvre warfare theory, it is not possible for the side that is weaker – mainly in terms of manpower and firepower – to adopt defensive principles from an operational point of view. Therefore, the main purpose is to take advantage of enemy weaknesses by moving troops, although manoeuvre can also be seen on the mental level of warfare. The main principles of manoeuvre warfare are pre-emption aimed at surprising the opponent; dislocation aimed at rendering the enemy's strength irrelevant; and disruption, which means attacking the opponent's vulnerabilities, including by psychological means. At the physical level manoeuvre warfare can be described as consisting of organisational means and command and control principles that will make the observation – orientation – decision – action-circle faster, and in this way improve the performance of the military force. This all illustrates that manoeuvre warfare theory also represents only an analysis of past theories and practices.

During the period that this study covers, the development of the Israeli art of war can be divided into five main phases:

- 1) the period of individual infantry and guerrilla tactics from the 1930s to the eve of the War of Independence in 1948,
- 2) the mobile infantry era from the War of Independence to the 1956 Sinai Campaign,
- 3) the era of the tank-air army or lightning warfare from the end of the 1956 War,
- 4) the dominance of tanks or the all-tank era,
- 5) the budding period of combined arms.

The foundation of the Israeli doctrine was laid down as early as the time before WW II, when the state of Israel did not even exist. In the early years of the 20th century, an increasing number of Jews who lived outside of Palestine immigrated to Palestine as a consequence of the aims of the Zionist movement, and because of the persecution of Jews in Eastern Europe. This immigration gradually caused growing disputes between the indigenous Arab population and the Jewish pioneers. At the very beginning, the Jews relied on hired local Arab and Circassian guards to defend their isolated settlements. This continued until 1904 when the second wave of immigration came to Palestine from Russia and Eastern European. These people had some experience with defence because they had protected their earlier homes against different gangs of bandits. The second movement of pioneers organised a small secret organisation called *Bar-Giora* in 1907. Two years later this group was expanded and renamed *Hashomer*. *Hashomer* began to train the members of the settlements to use weapons and organised armed guards against banditry, and thus took the defence of the settlements into its own hands for the first time. At the very beginning, Jewish tactics were based on the teachings of individual leaders with different – and often non-military – backgrounds.

During World War I, British troops conquered Palestine. Three battalions of Jews were authorised to enlist in the British Army. Although this so-called Jewish Legion did not gain any real combat experience, many of the future leaders of Israel served in the Legion and gained a lasting respect for regular army procedures. In the years that followed, this training became significant when the British-trained men assumed a leading role in defence affairs, especially when the IDF was established during and after the War of Independence.

The period of independent infantry

The Arab threat materialised three times during the 1920s and 1930s in the form of an overall attack on Jewish settlements and towns. The weakness and unwillingness of the Mandate authorities to protect the Jews strengthened their thoughts about defence against the Arabs and led to the foundation of the *Haganah* organisation, which can be seen as the real ancestor of the IDF. During these years, the semi-legal *Haganah* organised its ranks. The defence of settlements became the major concern. By inducting all citizens over the age of 17, both men and women, as members of the *Haganah,* a fair basis for

defence was laid. In addition, a spirit of defence was born amongst the pioneers in the settlements, which was totally different than traditional Jewish pacifism. Everyday life in a continually changing hostile environment also formed a basis for innovative defence principles.

During the third and longest Arab uprising before World War II from 1936 – 39, the *Haganah* made its most dramatic developments. It had to develop methods based on fast raids on enemy bands, aiming at their destruction and getting rid of the local threat. Three measures were taken, two of them largely contributed by the British. The first was the establishment of mobile Field Companies. The core of these forces was a small and unofficial mobile unit called *Ha-Nodedet* (patrols or wanderers), which was composed of volunteers from the Jerusalem *Haganah* in 1936. *Nodedet* was led by a Russian immigrant, Yitzhak Sadeh, who was one of the real forefathers of Israeli tactics and doctrine. This force finally broke the tradition of passive defence and is also seen as the basis of the Israeli Armoured Corps. In 1937, Nodedet formed a skeleton of country-wide mobile forces called FOSH (*Plugot Sadeh*, field companies). These units paved the way for the future Israeli fighting doctrine. Their tactics were new; they didn't wait passively for Arab attacks, rather they set out to track down and ambush the Arab guerrillas.

The second measure was the establishment of the Jewish Settlement Police (*Notrim*) with British assistance. Jews selected from a list of "reliables" were taken into this para-military force, which consisted of three main elements: a number of regular units called Special Constables, a large number of unpaid "supernumeraries" and mobile units. Within the ranks of the Settlement Police, the Jews were able to extend the trained reserves of the *Haganah*.

The third measure, and the one which was to have more of an indirect influence than the others on the future IDF, was the foundation of a special unit, the Special Night Squads (S.N.S.) under the command of the British Intelligence Officer Captain Charles Orde Wingate in spring 1938. Wingate left his mark on the military thinking of the *Haganah* from the tactical level to theoretical concepts, and his influence can be traced to subsequent Israeli campaigns. The most important influences were the principles of surprise, initiative, mobility and delegated leadership, which, however, were also principles emphasised by Sadeh. During Wingate's tour in Palestine, the Jews also got their first introduction to Sir Basil Henry Liddell Hart, the British military analyst who created the famous "Strategy of Indirect Approach" theory, which represents the modern interpretation of the classic principles behind the thinking on mobility, and is also often linked to the Israeli art of war. It is also obvious that already in the late 1930s and early 1940s, Liddell Hart's ideas were rooted in Israeli military thinking, though the extent remains unclear.

During WW II, as the German-Italian threat from North Africa came closer, the British again made some informal arrangements with the *Haganah* and established a full-time military organisation called PALMACH, mainly for armed scout missions. These companies were formed from the Settlement Police and S.N.S. veterans, and in this way the already adopted tactical skills were transferred to these new units. The threat did not materialise, but over 2,000 PALMACH members got military training which, combined together with their innovative tactics and other military skills, had an important role in the Israeli art of war in the future. After WW II, PALMACH and the remnants of the FOSH formed the skeleton of the *Haganah*. However, PALMACH was an elite group

of socialist-oriented pioneers from the settlements, which caused disputes between them and the *Haganah* leaders after the War of Independence when the IDF was regularised.

Jews also enlisted in the British Army during WW II. Over 28,000 Jewish men and 4,000 women served in its ranks of whom approximately 450 were promoted to officer. Many of these men and women immigrated to Palestine in the latter part of the 1940s. Their skills were in the background of the formal training and organisation of the IDF. Military experience in all branches of the army, in the commandos, in the air force and in the navy as well as Israeli's first introduction to administration and logistics originates mainly with the British Army. In addition those Jews – mainly PALMACH members – who served in the British Special Air Service in North Africa during WW II brought ideas about long-range penetration of mobile forces to Palestine.

When the War of Independence finally broke out in May 1948 after a half a year of various hostilities with the Arabs (a period called the Battle on the Roads), the Israelis were quite well prepared to fight from the viewpoint of organisational matters and trained manpower. The Israelis were at least equal to their enemies in manpower, without speaking of their qualitative advantage. In addition, the organisation of the whole army was already in existence; the General Staff was established and in charge of operations, regional commands (Southern, Central, Eastern and Northern) were formed and missions were divided between territorial and mobile units. It was also an advantage to operate on interior lines against the dispersed thrusts of the enemies.

The real weakness of the Israelis was the lack of heavy arms and aircraft. The Israelis tried to compensate for this disparity with their innovative tactical skills, and they finally succeeded in a quite satisfactory fashion. During the war, arms purchases also improved the situation. Elements of the indirect approach and the early tendency towards manoeuvre can already be seen in this war, although mainly at the lower levels of command. Although brigade organisations were already in use, in practice they were only administrative frameworks for small unit action; i.e., company and battalion operations.

The Israelis had, however, learned to disperse and concentrate their forces, they knew the area of operations and were capable of gathering intelligence information. Typical mobile operations were – especially in the southern front – deep penetrations into the enemy's rear with jeep-borne units. In addition, instead of using frontal attacks, the Israelis emphasised strikes against the enemy's flanks or tried to encircle them with the aim of disrupting their will to fight. Night attacks were also used often.

The major weakness in the Israeli performance during the War of Independence was their inability to control and lead larger formations (in this case brigades). This happened on the Jordanian front in particular, where there was no space for deep operations and the adversary was the well-trained Arab Legion. The impact of the Air Force was also – except for the final stages of the war when the command structure was unified – quite insignificant; although quite soon after they purchased their planes, the Israeli got air superiority in their own areas. Naval operations were rare.

The era of mobile infantry

After the War of Independence, the force structure of the IDF was stabilised, but not without disputes between ex-PALMACH members and other parts of the former *Haganah*. The organisational structure had been ready before the preceding war and was kept almost intact. However, IDF personnel experienced changes when Prime and Defence Minister David Ben-Gurion finally made a decision to favour the British-trained officers. Ben-Gurion wanted to remove the political, para-military and haphazard character of the PALMACH from the higher echelons of the army, and gave these missions to British-trained professional soldiers who were loyal to their political leaders. This dilemma led to some dismissals of senior PALMACH officers, but many of them also stayed. Younger PALMACH officers, who had not yet reached command positions, mainly stayed. This was a real advantage in the years to come. With British style administration and the innovative fighting skills of PALMACH, the new IDF could adopt the best traits of both models. British-trained officers were responsible for organisational matters and wartime planning while younger PALMACH officers were responsible for training.

The overall system of the defence forces was not adopted from Switzerland, as is usually thought. It had similarities with the Swiss system, but the Israelis developed a system of their own. A small cadre of regular officers, N.C.O.s and quite a large number of conscripts with a rather long service record formed the skeleton of the army. They were backed by a well-trained reserve whose skills were guaranteed by a long period of annual refresher training. Early warning in mobilisation was based on territorial defence and, on the most hostile frontiers, on the so-called para-military NAHAL settlements.

Israeli fighting doctrine was also designed between the War of Independence and the 1956 Suez Crisis, and its major features have remained the same without any remarkable changes up to this day. This doctrine is divided into three levels: conditioning factors, political-military factors and operational area.

The operational doctrine was based on several principles that have since modified Israeli military thinking as well as their organisations. First of all, because of the small and vulnerable size of the country, the overall purpose was to transfer the battles to enemy soil. This emphasised offensive principles and mobility. A short war concept was adopted because of the limited war economy in manpower, material and economic resources. However in the meantime, the Israelis emphasised the overall aim of achieving a decisive victory for deterrence purposes, which also could, nevertheless, be costly, but if the victory was seen as necessary, a certain rate of casualties would have been acceptable. Because of their inferiority in terms of quantitative strength, the Israelis also relied on qualitative superiority, both in manpower and in equipment. The principle of retaliation attacks was also adopted to reinforce the deterrence policy. Finally, the concept of pre-emption was already considered in the early 1950s, although it was not yet applied. Nevertheless, even in the period after the 1950s, pre-emption did not become a self-evident fact, rather it was thought through thoroughly in every single case. In the 1950s, these doctrinal principles – quite similar to the principles of manoeuvre warfare – also began to effect IDF organisations, although not so much before the 1956 Suez Crisis.

In the first part of the 1950s, because of the small size of the defence allocations, infantry was still the main branch, although the question of mobility was acute. This tendency dominated in the early 1950s during Generals Makleff's and Dayan's tenures as Chief of Staff. Infantry dominance was quite natural at the time because both Makleff and Dayan were infantry officers. Dayan, however, had good experiences with motorised infantry in the War of Independence, and during his tenure he rooted the ideas of mobile infantry in the IDF.

Nevertheless, after the War of Independence there also was a school of tank officers in Israel. They were led by Colonel Haim Laskov. However, disputes over the role of the tank in future wars were not rare. Therefore, up until the 1956 Suez Crisis there was no common agreement on how the tanks should be used in battle. Three major opinions existed. The first was held by the mobile infantry school as emphasised by the General Staff. To them, tanks were support weapons. The second school was the manoeuvre school to whom tanks, used for battalion-size independent striking missions, represented a force to be used for indirect approach behind the enemy front after the infantry breakthrough. The third school – consisting of most of the tank officers – favoured the German-style fighting doctrine; self-sufficient armoured brigades composed of combat teams of tanks, mechanised infantry and additional units to fan out in deep narrow thrusts and cut the enemy into isolated pockets and finally destroy him. However, the tank school also adopted the opinion that grinding tank-to-tank battles were to be avoided if this slowed the advance of the armoured spearheads.

Finally, a short time before the 1956 War, Ben-Gurion reached a decision in the spirit of Laskov; to deploy armour effectively and with maximum mobility in the largest possible concentrations. The principal mission of the tanks was defined as the destruction of enemy forces and not the seizing of territory. The concept of massed tanks coincided with the Israeli doctrine. In the ranks of the tank officers, armour was already seen as a means of paralysing enemy forces with swift penetrations into their depth against vulnerable targets. This also included, however, the seizing of geographical objectives – for instance vital road junctions – although this aim was, in itself, not a decisive one for tank formations, nor was it vital in the doctrine of the IDF. The principal purpose was to get space for continuous operations to finally destroy or paralyse enemy forces. Therefore – and for the first time in the IDF – tanks with both fire-power and ability to move under fire were regarded as a tool to destroy the adversary's forces, including reserves and armoured formations. This corresponded to the aim of a decisive victory. However, because of a lack of quantity, armour was not supposed to be used in exhausting frontal attacks against enemy masses. It was to be used according to the concept of indirect approach by keeping pace and concentrating forces against enemy weaknesses. These concepts, initially based on copied foreign manuals – mainly British, which ultimately had their origin in German manuals – became the basis of all ground forces in the IDF, not only the Armoured Corps.

The role of the Air Force grew during this phase while the Navy was seen as being in the second tier of development. This latter point did not mean that the Israelis didn't understand the possible threat of their two (Mediterranean and Red Sea) naval theatres. Because of a shortage of money, the Navy simply was not top priority, although one might say that before the 1956 Suez

Campaign there were not priorities between the branches. The Air Force, however, underwent a transformation. While Israel's Air Force was like a miniature great power air force with different types of planes in different missions in the War of Independence, in 1956 a large part of the Air Force was made up of multi-purpose jets that could be used both in bombing and interceptor missions. This transition was mainly made before the 1956 War, and the IAF already theoretically had the ability to launch a pre-emptive strike in 1956. In any case, the concept of pre-emption was obviously not fully adopted before the 1956 Suez Crisis.

The 1956 Sinai Campaign, the Israeli operation *Kaddesh*, was an exceptional war from the Israeli point of view because many of the opening movements were planned secretly in the political arena with the British and the French. This put some constraints on the operations, which the Israeli field commanders did not know. Chief of Staff Dayan favoured the idea of swift penetrations into the enemy's rear, but didn't trust the technically unreliable tanks – and therefore the General Staff opted for a blend of the mobile infantry and manoeuvre school approaches. Armour was not concentrated in *Ugdah*s, divisional frameworks that were established before the war. However, tanks were kept in brigade organisations, as were other forces. *Ugdah*s, which aimed at being operational commands, kept only a little of their decision-making power, and delegated the rest to the brigades. Therefore the brigades in the Sinai Campaign represented more than tactical formations, which for its part revealed a gap – the lack of an operational echelon – between Israeli strategic and tactical decision-making. In this war, operational decisions were in many cases made at the tactical level according to successes and not according to national aims.

Inside the Armoured Corps, an independent role for armour capable of spearheading an assault was already adopted and this was to have a decisive role in the war. On the other hand, the paratroop brigade, which was supposed to spearhead a possible offensive in the peacetime planning, only had a secondary role – except for the opening move, where a paratroop battalion was dropped deep in the Sinai to implement the *casus belli* of the Anglo-French commitment to the war. Armoured brigades were first kept in reserve. Nevertheless, during the war they were committed to battles, mostly with independent missions and at first against Dayan's specific order to keep tank formations in reserve. However, the mechanised and armoured units performed well. Commanders applied what they had learned, acted intuitively according to the situation and tried to make use of success, terrain and enemy weaknesses along the lines of Liddell Hart's "expanding torrent" concept and Fuller's "Plan 1919".

Dayan, Wingate's "pupil", played a large role in the war plan. Although some initial frontal attacks were used more or less ineffectively, the tendency to find holes in enemy lines and breakthrough his lines of communications dominated. After the Egyptian withdrawal order in the northern and central sector of the Sinai, the Israelis acted according to the concept of the "expanding torrent". In this way tank formations assisted by the Air Force, mainly via interdiction, made their way to the Suez Canal. In addition, the Israelis pushed one of their brigades through mountainous and pathless terrain on the southern part of the front, applying the principle of preferring the hazards of terrain over those of

the enemy and encircled the Egyptian troops by total surprise, an operation that later was compared to Liddell Hart's indirect approach.

The birth of lightning warfare doctrine

Because of the positive experiences with the use of tanks, the ideas of the mobile infantry school were abandoned after the war, and the manoeuvre school and an independent armour school formed the basis of the armour doctrine in the years that followed. The tendency towards mobility strengthened when Chief of Operations Yitzhak Rabin and reserve General Avraham Yoffe planned a doctrine, called "Constant Flow" in this study, in the beginning of the 1960s. This concept was based on the assumption that troops would be safe while constantly on the move, while they would be in danger in fixed fortifications. In this way, the IDF – at least partly – abandoned the idea of trench warfare and fixed defence, including fortifications. Simplifying, the "Constant Flow" doctrine stressed indirect action; this meant mental mobility at a planning level and operational and tactical mobility in practice; i.e., flanking attacks, infiltration and attacks from the rear. In the early 1960s these principles were also written into different levels of manuals.

This all also affected the organisations. The Israelis re-built their divisional task forces, *Ugdah*s, although only in reserve. The *Ugdah*s consisted of a small permanent staff and brigades and auxiliary units according to the task. These task forces were not only trained for operative penetrations and encirclements, but also for breakthrough battles in the initial phases of the fighting. At a tactical level, brigades and their lower echelons were trained for fast, mobile battles, and for surprise attacks and ambushes, in other words for the kind of action where the possibility of being tied down in attrition warfare was slight. At frontal and General Staff level, the Israelis emphasised unusual thinking, planning and implementation, alternative concepts of operations including deception, and the ability to change plans according to the situation.

The idea of unorthodox thinking put heavy stress on the chain of command and on commanders. Therefore, the Israelis adopted a command process that was equivalent to the German *Auftragstaktik*. The fathers of this principle, called "Optional Control" in Israel, were Generals Haim Laskov and Yitzhak Rabin. The basic idea of "Optional Control" was that commanders should lead their troops in battle not with strict orders from a higher echelon, but with the overall operational scheme of their superiors. This meant that the objective or aim was important; the way you implemented the mission was not. This manner of thinking was seen as being absolutely necessary in the constantly changing situations of mobile warfare and the only way to maintain initiative and tempo.

The Israeli Air Force was also re-built according to the operational doctrine. In the early 1960s, the IAF's overall tasks were both defensive and offensive: to shield mobilisation and interdict the flow of enemy forces on the main axis, and to be a striking force. In the IAF, this was interpreted as being primarily implemented with a pre-emptive air strike. Once the skies were clear, the IAF was to devote itself to its second task, supporting the ground forces. The IAF thoroughly analysed its own and enemy strengths and weaknesses in their two preceding wars. This led to the selection of specific aircraft, weapons and tactics, and to the training of both pilots and ground personnel. In addition, a

special emphasis was laid on intelligence. With these lines, the IAF achieved simultaneous pre-emption and ground support capabilities in the early 1960s with only some 200 jets. Devised upon a model similar to that of the German *Luftwaffe* in "Operation *Barbarossa*", the IDF also devoted itself to destroying the enemy air power on its airfields to achieve air-superiority, which was seen as a pre-condition for using the mobile ground forces. In addition, the IDF also established its first helicopter squadrons in the early 1960s. They were capable not only of rescuing pilots, but also of transporting combat troops within the range of the helicopters. Nevertheless, a doctrine for using helicopters was not created.

The IDF and its doctrine were put to the test in the Six Day War in 1967. It succeeded in a satisfactory manner, although a great part of this belonged to the Air Force, which was able to destroy the enemy air power on its airfields. Therefore, the movements of the ground forces were much more easier with the protection of complete air superiority, just as the Israelis had planned. The operations of the ground forces were very unlike, though all were implemented in the spirit of mobility with tanks playing a central role. Brigadier Israel Tal's *Ugdah* represented the best of the Israeli armoured warfare developed in the years before the war. Tal massed his forces against Egyptian defences and after breakthrough pushed to the Egyptian lines of communication. The operation of General Avraham Yoffe's *Ugdah* through terrain that the Egyptians had regarded as impassable is, correspondingly, a good example of the use of the principle of "expanding torrent", about which Liddell Hart was excited to say that it was the best demonstration of his theory of the "Strategy of Indirect Approach". Nevertheless, this operation was also based on using tanks as was mainly the case on the Jordanian and Syrian fronts. However, the tendency towards flanking operations and finding gaps in enemy defences can also clearly be seen on the West Bank and on the Golan Heights. This shows that despite the growth of firepower and cover with the increase of the armoured forces, operational principles had not changed significantly since the 1950s. In the Six Day War, Israel's operational concept was also to surprise her enemies and take advantage of their weaknesses instead of pushing through with force to balance the quantity.

The dominance of tanks

The conquests of the Six Day War left Israel in a completely new situation and gave the Israelis groundless feelings of security. In addition, the military victory led to some degree to overconfidence in the IDF's military capabilities. Peace on the Egyptian front came to an end very soon, extending to the War of Attrition in 1969 – 1970. On the whole, the period between the Six Day War and the next Middle Eastern war, the Yom Kippur War in 1973, was a heated period of political and military disputes.

In the clashes of the War of Attrition, Israel adopted a strategy of "defensive defence", which meant that no inch of Israeli occupied soil would be yielded to enemies. Operationally this meant the construction of fortifications for the first time in the IDF's history since the self-defence of the settlements, the Bar Lev Line on the eastern shore of the Suez Canal and a girdle of forts in the Purple Line on the Golan Heights. This also meant that although the operational doctrine had not experienced changes after the Six Day War, in practise the

imbalance between the strategy and operational principles at least confused the thoughts of operational commanders; i.e., how should forces be used in the case of an all-out war. This was also the case when the Yom Kippur War broke out in October 1973. Plans were made but not implemented, especially in the Sinai. In addition this not only shows Israel's views on the impossibility of a large-scale war, but also Arab abilities to deceive the Israelis and prepare for the war according to realistic objectives.

The construction of fortifications took a lot of money and forced the IDF to concentrate its development programmes on certain sectors. Tanks and the Air Force had succeeded well in the Six Day War and took priority, excluding the fact that the Navy's development programme was already in process and was not interrupted. Nevertheless, the Israelis drew distorted conclusions from the Six Day War. Israeli success in the war had not been a consequence of the superiority of tanks and aircraft on the battlefield, rather it was the lack and inefficiency of the antitank and antiaircraft capabilities of Israeli's opponents and the opponents' lack of an Air Force. However, in light of the experiences of the Six Day War, the IDF introduced permanent armoured *Ugdah*s between 1967 and 1973 where the main bulk of the force consisted of tanks while other arms were neglected. This went against the combined arms principle and, in addition, meant at least a partial loss of the flexibility to create forces according to the threat and conditions. In addition, the Air Force was still to assist the armoured formations as "flying" artillery despite the experiences with antiaircraft missiles in the War of Attrition and the growing anxiety of the Air Force staff on this question. Therefore, only the Navy, with its new missile boats, was in accordance with the scenario of the future battlefield.

The strategy of "defensive defence" and the fear of the escalation of the hostilities led to a tightening of the command and control principles of the operational forces, especially in the Sinai. Although this is understandable, it went against the "Optional Control" principles and centralised the command process. In addition, many of those commanders who had experienced all of Israel's past wars resigned or were indirectly forced to resign in the rejuvenation process of the IDF commanders in the early 1970s.

In the Yom Kippur War, the Arab surprise attack, in connection with the confusion of Israel's strategic aims and operational practise, deficiencies in organisations and weaknesses in command, control and communication principles, almost put Israel on the verge of destruction. During the first few days of the war the situation was grave on both the Syrian front on the Golan Heights and on the Egyptian front in the Sinai. In the Sinai, the IDF had room for mobile defence except that this principle was in its infancy. Therefore, and according to the plans for a limited war, Israeli tanks rushed towards the Canal line without covering infantry to support the infantry in the Bar Lev Line bunkers, with disastrous results in the Egyptian antitank traps. Such was the case with the first co-ordinated counter-attacks as well. The attacks were not so co-ordinated, nor were they concentrated and they were made according to a completely biased picture of the situation. In addition, the Air Force was encountering great difficulties with the Egyptian and Syrian air defence networks. The pre-emptive strike was cancelled, mainly for political reasons. The possibility of a strike had existed, though its efficiency might have been at least questionable. Besides, the resources of the IAF had to be divided to both fronts. Therefore, after the initial failures, the Israelis chose to stay in a

defensive posture in the Sinai until the situation on the Golan front had been resolved. In the Sinai, the Israelis had, however, room to retreat, though this word was never mentioned.

On the Golan, Israel did not even have room to retreat. However, the forces were better prepared for battle – though initially also greatly quantitatively inferior – and acted according to their plans. On the Golan, the mobile defence of combined arms enabled the defence to hold until the arrival of the reserves. After the holding action, the Israelis immediately went over to the offence. The role of experienced commanders, including reserve divisions, was central in this. Traits of the use of indirect approach as well as ideas from the "Constant Flow" doctrine can also be seen in the counter-offensive. In continuous mobile operations the Israelis tried to threaten the Syrian weak points and, in this way, were able to draw the threat away from Israel proper.

In the Sinai as well, the IDF acted according to its old operational doctrine after the holding action. The unmanned seam between the two Egyptian armies gave the Israelis a possibility of throwing the Egyptians off balance. According to this concept, the Israelis launched an offensive of three divisions across the Suez Canal into the Egyptian rear after the holding action and surprised the Egyptians despite the fact that both belligerents had planned for such a possibility during the War of Attrition. However, the Egyptian pressure on the eastern shore of the Canal made Israeli political and military leaders cautious. This caused delays that lengthened the war, but this can be seen as realism. Despite this fact, the Israelis were able to seize both Egyptian armies in the Sinai, one of them completely. As with the counter-offensive on the Golan, the role of the veteran commanders of the IDF was also central in the crossing operation.

Simplifying, it can be said that during the Yom Kippur War, the Israelis did not implement the pre-emptive policy, rather they were forced to absorb the first blow. Although this was mainly a consequence of the imbalance between the political aims and military implementation, in the counter-offensives on both fronts the IDF mainly followed its old operational doctrine of "Constant Flow"; transferring the battles onto enemy territory, putting him off balance and trying to end the war as quickly as possible. In addition, the aim of decisive operational victory – the destruction of the Egyptian and Syrian armed forces – can also be seen behind the final operations although this aim was not achieved.

The budding era of combined arms

After the Yom Kippur War, the Israeli public felt betrayed because the IDF was incapable of achieving a quick victory over its adversaries. In this atmosphere an investigating committee, called the Agranat Committee, was established to analyse the past war. The report, which was released to the public piecemeal, caused turbulence both in Israel's Government and in the supreme command of the IDF and led to resignations. The committee also made suggestions on the organisation, equipment and armament of the future IDF.

The change that the IDF experienced by the early 1980s was enormous in the quantity and quality of arms and manpower, but rather slight in doctrinal principles. The latter can be explained by the conditioning factors behind the doctrine. Despite the Camp David Peace treaty with Egypt in 1979, the

political, geographic, demographic and economic circumstances that had formed the guidelines for the military-political and operational factors had not changed significantly with regards to changes in the Arab countries. Instead, a better economy and foreign – mainly U.S. – help made it possible to modernise the whole IDF.

During the decade following the Yom Kippur War, the operational forces of the IDF were fully mechanised. This means that all armoured formations were reinforced with mechanised infantry with modern APCs and with self-propelled artillery, which all shows the growing emphasis on firepower at the expense of movement. These changes were mainly finished by the end of the 1970s. Nevertheless, as had happened before the Yom Kippur War, the IDF also prepared for the last war this time too, without enough consideration of the possibility of a different war in the future. It is obvious that the IDF that was in existence in "Operation *Peace for Galilee*" in 1982 would have been successful in conditions equivalent to the Yom Kippur War. However, the rugged terrain of Lebanon did not make the full use of a mechanised army possible. The lack of foot infantry was revealed, which was a basis for further changes after the war. In addition, the continuous change of the order of battle showed the weaknesses of fixed organisations in certain conditions. On the other hand, the Air Force had done its homework well and had acquired superiority over the antiaircraft missile networks in less than 10 years.

On the whole, events between the Yom Kippur War and "Operation *Peace for Galilee*" also illustrate how the development of the military art is a continuous process of considering the future, developing theories and concepts, principles, and tactical and technical means and counter-means. Thus, the development of the art of war is an endless race where the party that is able to form a better combination of the facts listed above will probably be more successful. Nevertheless, it will greatly help if the conditioning factors are realistically grasped. In Israel, this prerequisite has been fulfilled rather well as the stability of the doctrine reveals. This has mainly also provided quite good guidelines for the operational art, where mobility has been the red thread. For Israel, mobility has been a means of compensating for her geographic, economic and demographic inferiority. In the Israeli Defence Forces, mobility was at least up to the Yom Kippur War (inclusive) itself the art of war. In any case, wars can not be solved at the operational level, however decisive the victories might be. This fact can be seen in the situation of the Middle East today.

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FULLER'S PRINCIPLES OF WAR

General	*Tactical*
1) Objective	1) Demoralisation
2) Offensive	2) Endurance
3) Mass	3) Shock
4) Economy of Force	
5) Movement	
6) Surprise	
7) Security	
8) Co-operation	

Holden Reid: J. F. C. Fuller: Military Thinker, p. 36.

FULLER'S OPERATIONAL PRINCIPLES

1) From the military point of view, one hour is not 60 minutes, but what is accomplished in 60 minutes.
2) The most effective form of defence is mobile defence, which permits the defender to protect his fighting power without surrendering the initiative.
3) In the offence and defence in manoeuvre warfare, the main aim should be the dislocation of the enemy's command and organisation, and not just the destruction of his fighting troops, though this should not be neglected.
4) All plans should be based on the defensive offensive, the strongest form of war. Even lightning offensive advances should be founded on a secure base; if they were not, movement forward would lack backbone.
5) The pursuit is the most important act in battle because, if correctly organised and launched, it guarantees the annihilation of the enemy and the attainment of the political object of the war.

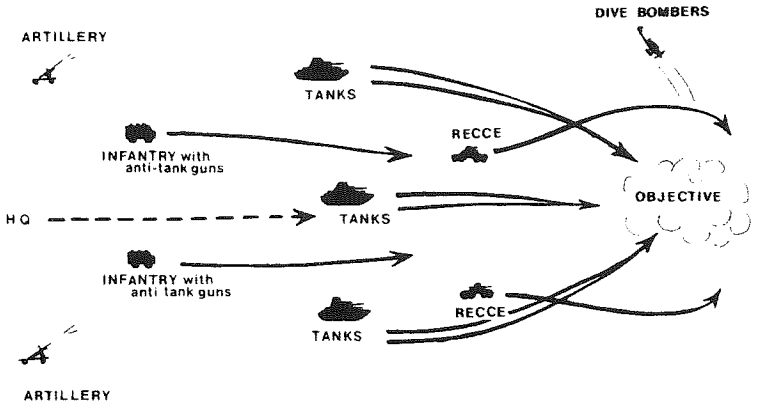
Holden Reid: J. F. C. Fuller, p. 36 and B. H. Liddell Hart, p. 67.

LIDDELL HART'S TACTICAL PRINCIPLES

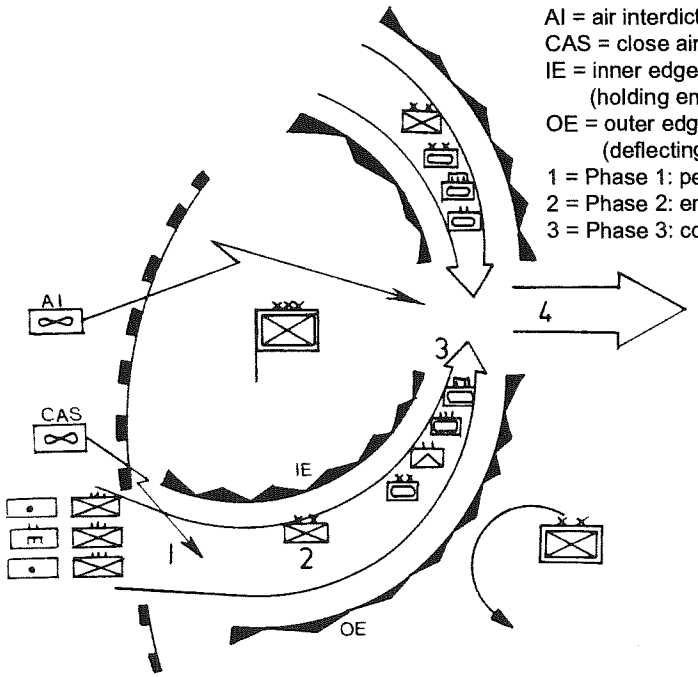
1) Adjust your ends to your means.
2) Keep your objective always in mind.
3) Choose the line of least expectation.
4) Exploit the line of least resistance.
5) Take a line of operation that offers alternative objectives.
6) Ensure that both plan and dispositions are flexible – adaptable to circumstances.
7) Do not throw your weight into a stroke whilst your opponent is on guard.
8) Do not renew an attack along the same line after it has once failed.

Liddell Hart: Strategy, p. 335 – 337.

THE GERMAN BLITZKRIEG DOCTRINE IN 1941 - 1942



Macksey: The Tank Pioneers, p. 141



Bellamy: The Evolution of Modern Land Warfare, p. 94

TOPICS OF THE TRAINING PROGRAMME OF THE SPECIAL NIGHT SQUADS

1. The Nature of War, the Warmachine, Infantry tasks and " Soldiers' Commandments."
2. The Infantry Platoon in battle.
3. Infantry in Defence.
4. Infantry in Attack.
5. Leadership and military vices.
6. The tasks of different forces (Field Artillery in support of Infantry in the field, the tasks of Engineers and the tasks of Cavalry).

EMPHASIS OF LECTURES AND TRAINING

1. Intelligence
2. Surprise
3. Initiative
4. Operational independence
5. Mobility.

TEMPORAL DIVISION OF TRAINING PROGRAMME

1. Three days of lectures around a large sand-table.
2. Drilling and exercise in and around the camp.
3. Patrol work (4 days).
4. Furlough (4 days).

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1) Sykes: Orde Wingate, p. 174, **2)** Bredin, H.E.N. (Maj-Gen.): Return to Ein Harod, Jewish Observer and Middle East Review, October 17, 1969, LH 15/4/486, p. 20 – 21 and **3)** Account of the action of the Special Night Squads, typescript copies of documents to Liddell Hart given by Captain Wingate in Autumn 1938, LH 15/5/300. Liddell Hart enclosed the original ones in a letter, dated 1 June 1950, to the Israel Defence Forces Archive.

APPENDIX 4

APPROXIMATE STRENGTHS AND ESTIMATED LOSSES OF OPPOSING FORCES DURING THE MIDDLE EAST WAR 1948 – 1949

The rise of the strengths between 15 May 1948 and October 1948 and orders of battle

	Israel	**Arabs all**	**Egypt**	**Syria**	**Jordan** [1]	**Lebanon**	**Iraq**	**ALA** [2]	**AAS** [3]
Manpower	34 400 → 90 000 - 4 territorial commands - 12 brigades	55 000 – 68 000 [4]	7 000 → 20 000	5 000 - 3 brigades	7 500 → 10 000 - 2 brigades - 1 territorial city force	2 000	10 000 - 4 brigades	5 500 → 3 000 - 1 command - 8 battalions - 3 territorial city units	5 500 → 5 000
Tanks	3 →13		10 – 20	10 – 20	-	-	-		
APCs	50 [5]		25 – 30	36	45	9	25 – 30		
Artillery	16 → 250 [6]		48	24	24	8	48		
Aircraft	10 [7]		21 – 25	14			20		
Vessels	0 → 3 [8]		0 [9]						

Losses

	Israel	Arabs
Total	21 000	40 000
Killed	15 000	25 000
Wounded	6 000	15 000

[1] Arab Legion of Transjordan.
[2] Arab Liberation Army.
[3] Arab Army of Salvation.
[4] Dupuy gives the smaller numbers and van Creveld the bigger ones. The reason for this remains unclear.
[5] 2-pounder scout cars, later also half-tracks. In addition the Israelis had, according to Katz, some 100 home-made armoured cars.
[6] In May only six 65 mm and a 20 mm. In October sixty 75 mm.
[7] At the end of the war in spring 1949, the IDF had, according to Cohen, some 200 aircraft.
[8] Corvettes. In addition the Israeli naval forces had a few motorboats and a number of frogmen.
[9] Israel's only adversary with a navy was Egypt. She had several old British Coast Guard craft.

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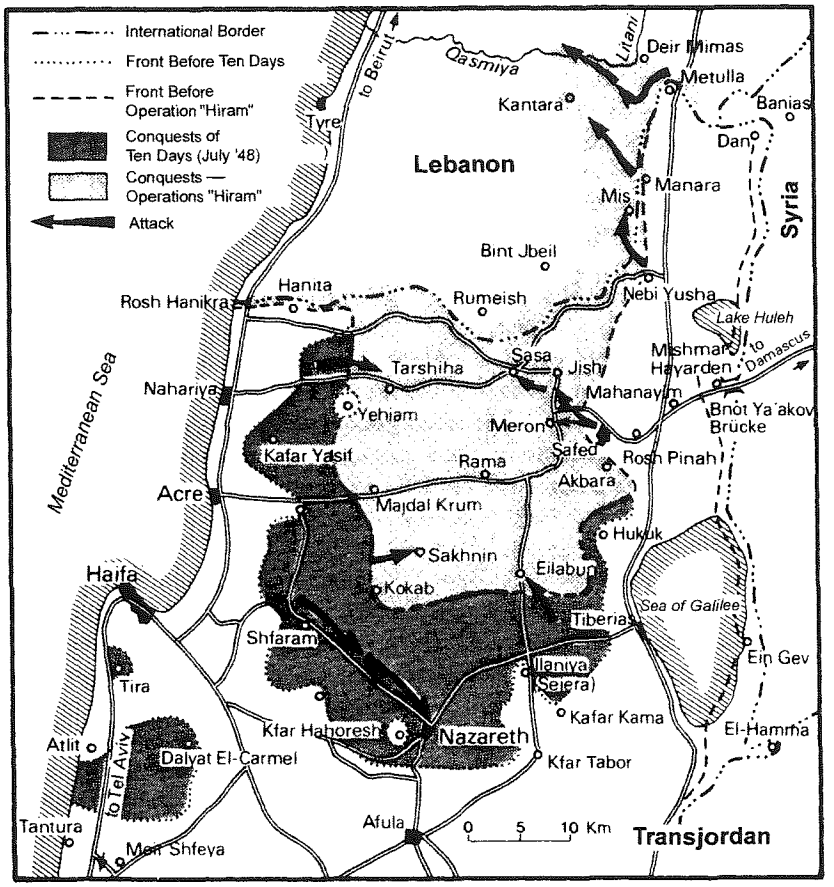
1) Dupuy: Elusive Victory, p. 117 and 123 – 125 **2)** van Creveld: The Sword and the Olive, p. 78, **3)** Herzog: The Arab Israeli Wars (1982), p. 20 – 21 and 48, **4)** Katz: Fire & Steel, p. 23 and 36 – 41 and **5)** Rothenberg: The Anatomy of the Israeli Army, p. 58.

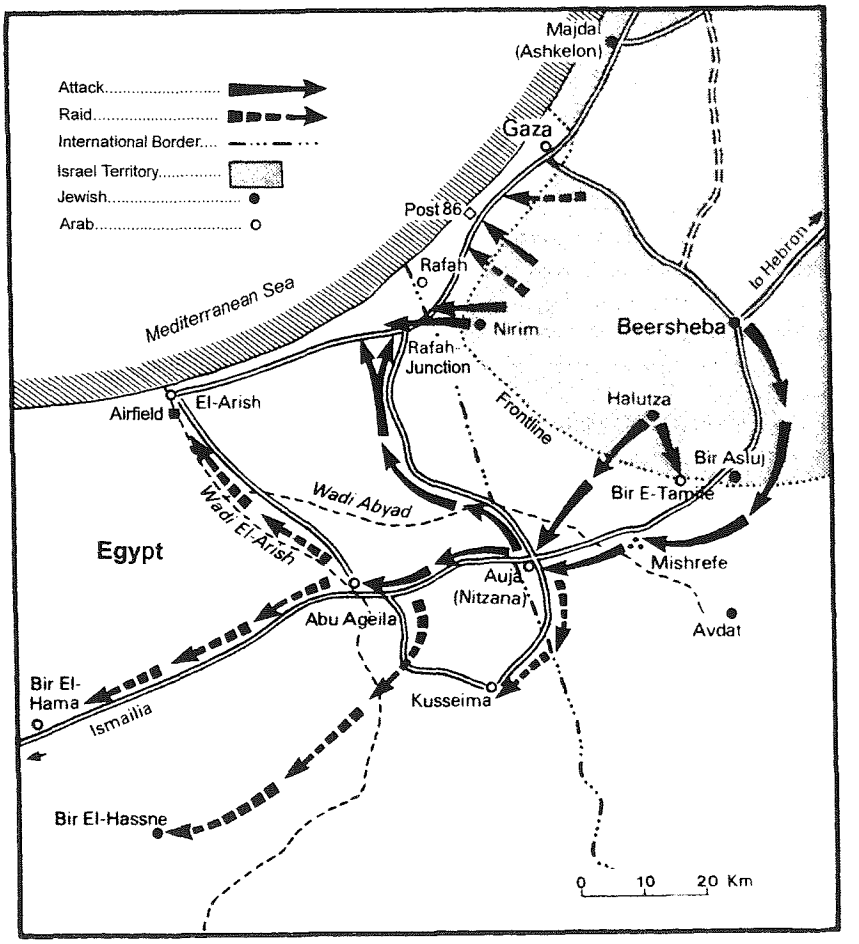
EXAMPLES OF ISRAELI OPERATIONS DURING THE WAR OF INDEPENDENCE

Operation "Hiram" 29 to 31 October 1948



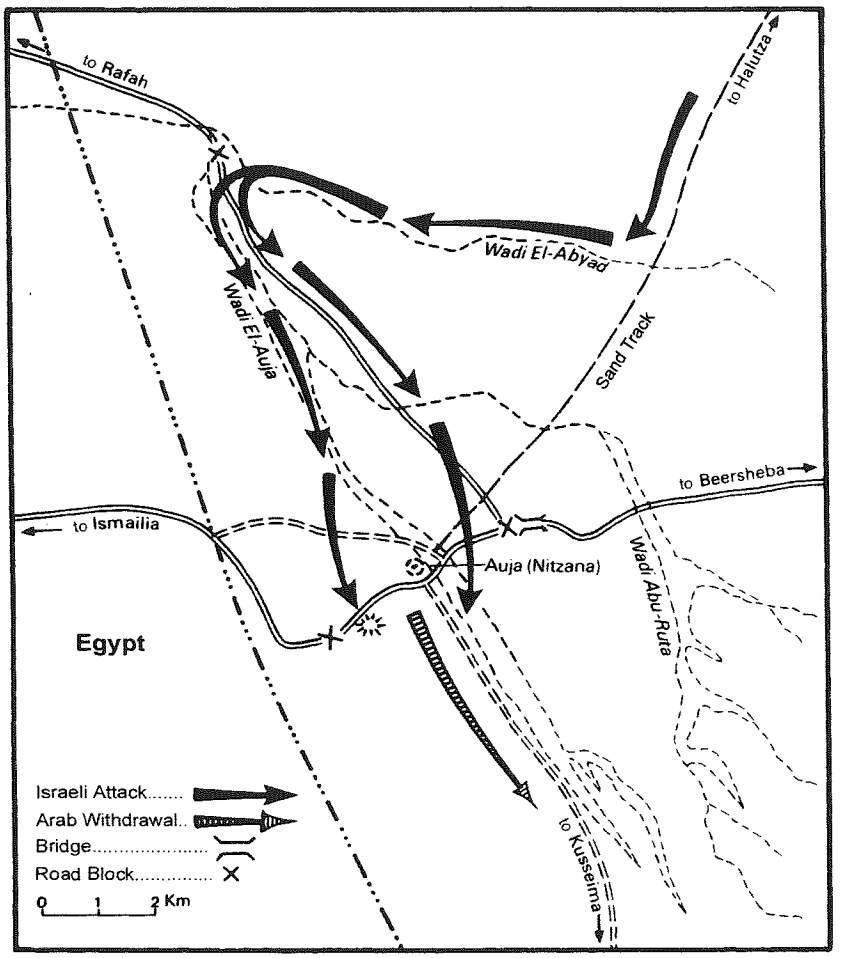
Herzog: The Arab-Israeli Wars (1982), p. 90.

Operation "Horev" 22 December 1948 to 8 January 1949



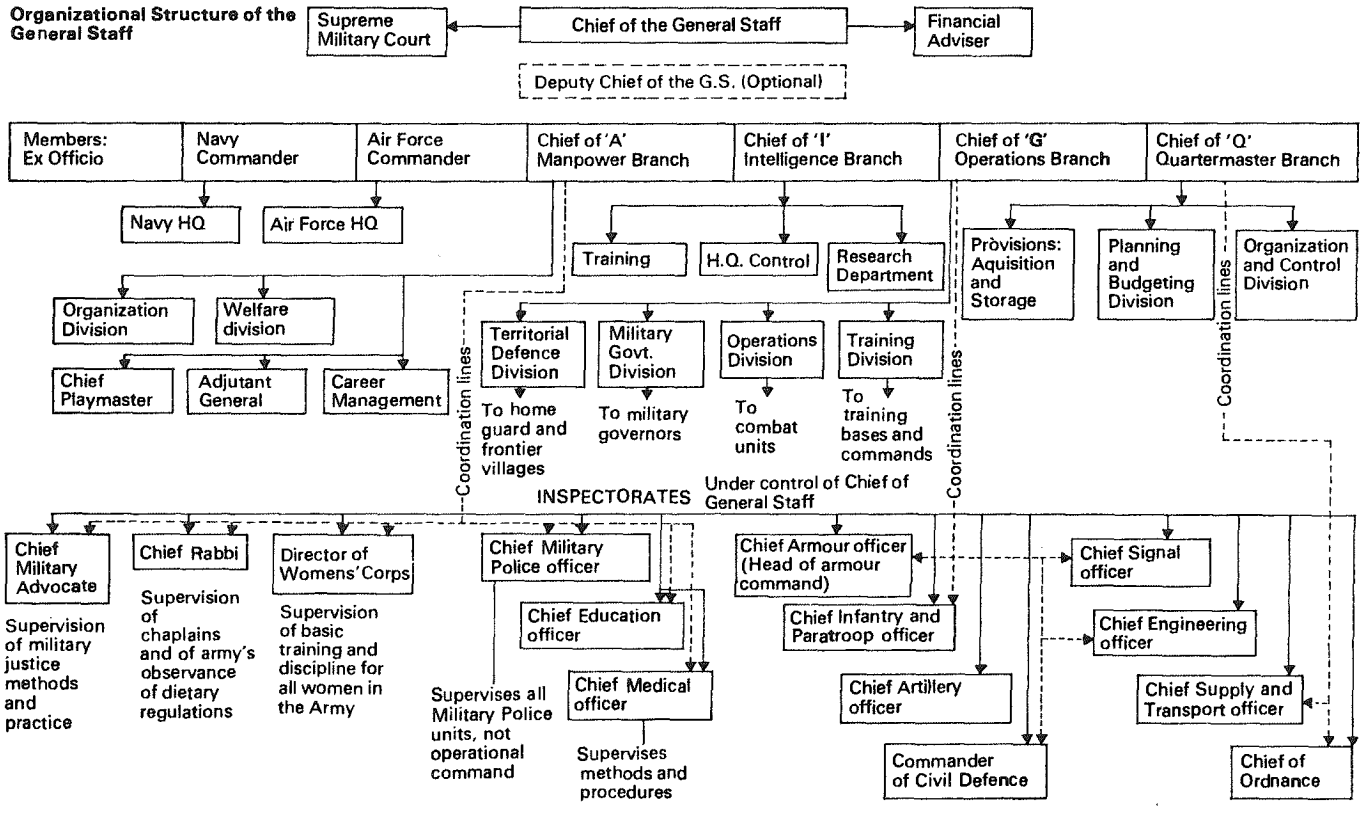
Herzog: The Arab-Israeli Wars (1982), p. 99.

The conquest of Auja (Nitzana), operation "Horev", 27 December 1948



Herzog: The Arab-Israeli Wars (1982), p. 101.

ORGANISATION OF THE IDF GENERAL STAFF



Luttwak & Horowitz: The Israeli Army, p. 97.

DOCTRINE OF THE IDF IN THE LATE 1990s

TO DEFEND THE EXISTENCE, TERRITORIAL INTEGRITY AND SOVEREIGNTY OF THE STATE OF ISRAEL.
TO PROTECT THE INHABITANTS OF ISRAEL AND TO COMBAT ALL FORMS OF TERRORISM THAT THREATEN THE DAILY LIFE.

SECURITY DOCTRINE

Basic Points

- Israel cannot afford to lose a single war.
- Defensive on the strategic level, no territorial ambitions.
- Desire to avoid war by political means and a credible deterrent posture.
- Preventing escalation.
- Determine the outcome of war quickly and decisively.
- Combating terrorism.

The Operational Level

Defensive Strategy - Offensive Tactics

- Prepare for Defense
  - A small standing army with an early warning capability, regular air force and navy
  - An efficient reserve mobilization and transportation system.
- Move to Counter-Attack
  - Multi-arm coordination.
  - Transferring the battle to enemy territory quickly
  - Quick attainment of war objectives.

Capabilities
- Intelligence
- High capability to destroy mobile targets
- Long-range capabilities
- Anti-missile defense
- All-weather and low-visibility capabilities
- Advanced training systems

Main Areas of Activity
- Continuous high state of readiness for war
- Anti-terrorist warfare
- Combating terrorism by Palestinian rejectionist groups
- Building the armed forces for the future battlefield

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http://www.idf.il/English/MAIN.HTM, 13.7.1999 at 12.45

APPENDIX 8

APPROXIMATE STRENGTHS, ORDERS OF BATTLE AND ESTIMATED LOSSES OF OPPOSING FORCES DURING THE SINAI CAMPAIGN 1956

Strengths

	Israel	Egypt
Manpower	30 – 50 000 [1]	45 000
Tanks	400 [2]	530 [3]
APCs	450	200
Artillery pieces	150	500
Self-propelled anti-tank guns	-	50
Combat aircraft	155 [4]	255 [5]
Vessels	25 [6]	50 [7]

Orders of battle

Israel	Egypt
Chief of Staff (Dayan)	Minister of Defence, Commander-in-Chief
Southern Command (Simhoni)	*Eastern Military Zone* (Sinai)
77th Ugdah (northern Sinai, Laskov)	3rd Infantry Division
- 1st Infantry Brigade	- 4th Infantry Brigade
- 11th Infantry Brigade	- 5th Infantry Brigade
- 27th Mechanised Brigade	- 6th Infantry Brigade
38th Ugdah (central Sinai, Wallach)	8th (Palestinian) Infantry Division
- 4th Infantry Brigade	- 86th Palestinian Brigade
- 10th Infantry Brigade	- 87th Palestinian Brigade
- 7th Armoured Brigade	- 26th National Guard Brigade (Egyptian)
- 37th Mechanised Brigade	4th Armoured Division
202nd Paratroop Brigade (Mitla)	- 1st Armoured Group
9th Infantry Brigade (Sharm-el-Sheikh)	- 2nd Armoured Group
12th Infantry Brigade (Gaza)	- 2nd Infantry Brigade
	2nd Light Reconnaissance Regiment
Air Force (Tolkowsky)	Sharm-el-Sheikh Region
Navy (Tankus)	- 21st Infantry Battalion Group
	Gaza Command
	Port Said Region
	Air Force
	Navy

Egyptian losses

		vs. Israel	vs. Anglo-French forces
Killed	1 650	1 000	650
Wounded	4 900	4 000	900
Missing	6 185	6 000	185
Total	12 735	11 000	1 735
Aircraft	215	15	200 [8]

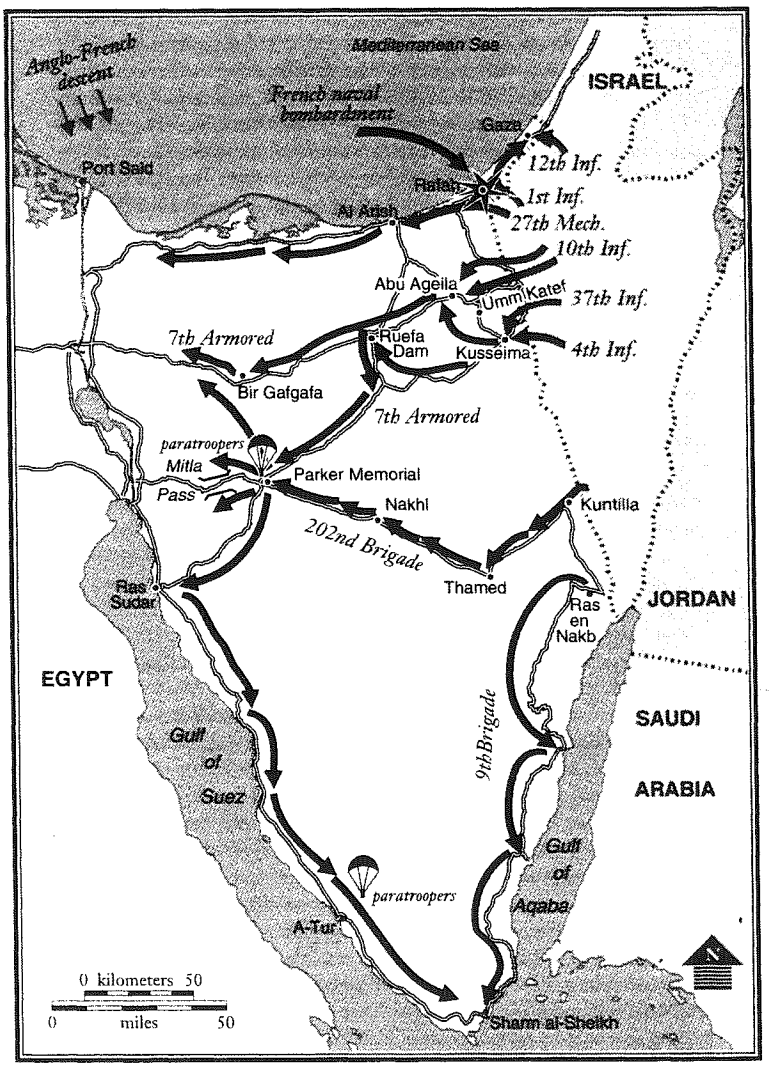
Israeli losses

Killed	189
Wounded	899
Missing	4
Total	1 092
Aircraft	15

[1] Dupuy gives the larger numbers and van Creveld the smaller ones.
[2] 100 *AMX-13*s and 300 *M-4 Sherman*s.
[3] Includes Su-100 assault guns.
[4] 19 *Mystère*s, 25 *Ouragan*s, 25 *Meteor*s, 29 *Mustang*s, 16 *Mosquito*s, 20 *Harvard*s, 16 *Dakota*s, 3 *Nord*s and 2 *B-17*s.
[5] 45 *MiG-15*s, 40 *Vampire*s, 38 *Meteor*s, 49 *Il-28*s, 8 *Furies*, 20 *Commando*s, 20 *Dakota*s, 35 miscellaneous transports.
[6] 2 destroyers, 3 frigates, 12 torpedo boats, 3 landing craft and several patrol boats.
[7] 2 destroyers, 7 frigates, 2 corvettes, 8 minesweepers, 21 motor torpedo boats, 1 landing craft and several small patrol boats.
[8] On the ground.

1) Dupuy: Elusive Victory, p. 209 and 212 – 213, **2)** van Creveld: The Sword and the Olive, p. 142 and **3)** Jane's Fighting Ships 1956 – 57, Jane's Fighting Ships Publishing CO., LTD, London 1956, p. 217 – 218 and 170 - 173.

OPERATION "KADDESH" IN THE SINAI CAMPAIGN 1956



Van Creveld: The Sword and the Olive, p. 140.

ISRAELI TACTICAL COMBAT PRINCIPLES DURING THE SINAI CAMPAIGN 1956 ACCORDING TO S. L. A. MARSHALL

1) Leading means moving to the point of the main danger if decisive pressure is to be maintained. There is no excuse for holding back.

2) When orders can't get through, assume what the orders would be.

3) When in doubt, hit out. The short route to safety is the road to the enemy hill.

4) Don't attack head-on; there is usually a better way.

5) If you must go in head-on, don't present a broad target.

6) When troops are truly exhausted, hold back and rest them.

7) Waste no energy in useless movement. Maintain the pace of the attack so long as physical resources seem sufficient.

8) If the force designated to attack is not suitably armed to overrun the position, pull off and call for what is needed. Avoid useless wastage.

9) Don't delay the battle because of supply shortages which lie beyond its probable crisis.

10) Keep your sense of humor if you would save your wits.

11) When trapped by sudden fire, movement means salvation more surely than a foxhole.

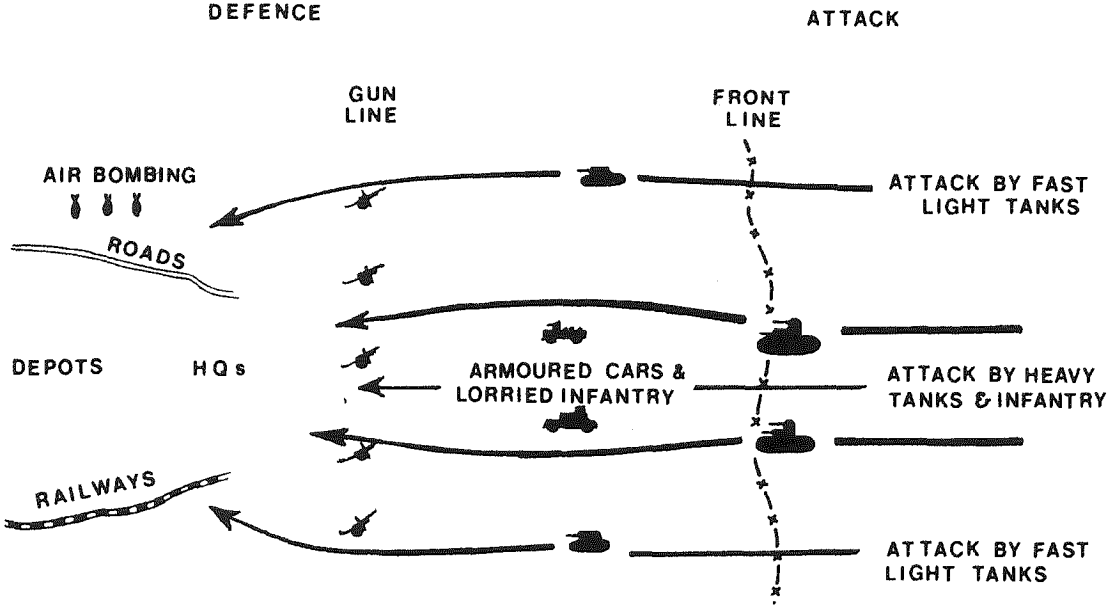
12) Always try for surprise in one form or another.

13) When local surprise is possible, don't expose movement with premature fires.

14) In the attack, risk, risk, risk.

Marshall: Sinai Victory, p. 22 – 23.

FULLERS "PLAN 1919"

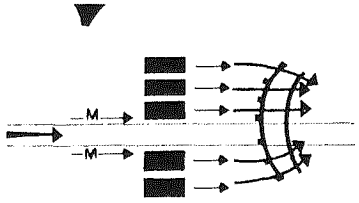


Macksey: The Tank Pioneers, p. 36

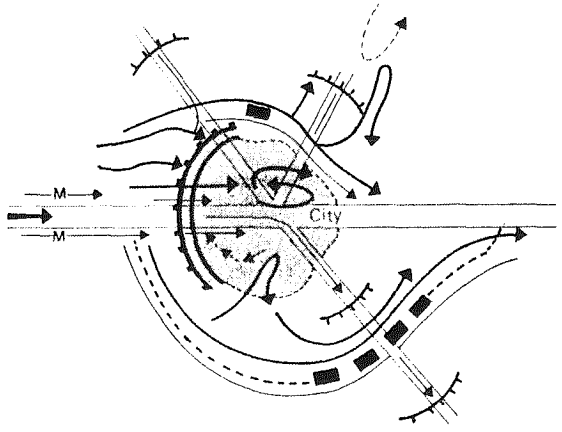
CONVEYOR-BELT PRINCIPLE

Armour and infantry in Sinai 1967, Northern Axis.
The 'conveyor-belt' integration of armour, infantry and logistic support
(Artillery, Engineers etc. not shown)

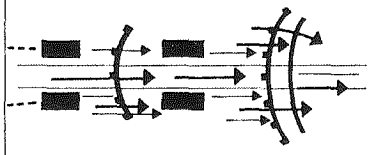
Complete Cycle



Tank Battalions ⟶ attack on their own remaining concentrated to do so. They are immediately followed by mechanized infantry battalions ⟶ and by first-echelon supply ▬ mini-columns equipped with cross-country vehicles. The 'conveyor belt,' of first-echelon supply, repair and recovery and medevac is sustained in turn by main (road bound) supply columns ⟶ for which the infantry (motorized) ⟶M⟶ secures the so far uncleared roads. Hence the speed of the advance is set by the tank battalions, and *not* by the infantry.



No attempt is made to clear the City of all organised opposition. Tank Battalions ⟶ go in and out with Mech Inf ⟶ and bypass City together with first-echelon supply and support ▬ . Mopping up is left to the motorized infantry with tank, artillery detachments in support. If City holds out, cross-country supply vehicles maintain a link - - - - to sustain the advance.



Advance continues at tank tactical speed until conveyor-belt can be stretched no more. But flexibility of system allows advance (with decreasing spearhead) to continue while enemy opposition in City is being reduced. Once road is secured, supplies are rushed to replenish the first echelon of the conveyor belt.

Luttwak & Horowitz: The Israeli Army, p. 294.

PROGRAMME OF THE ISRAELI AIR FORCE FLIGHT COURSE DURING 1960s

Preliminary selective tests.

Pre-preparatory stage

- theory
- physical training
- first flights.

Preparatory stage

- ground exercises within a company framework.

Primary stage

- basic air training
- first solo flight
- orientation to fighter-aircraft, to helicopters or to orientation.

Basic stage

- flight training.

Senior basic stage

- parachuting
- rescue course
- officers' training.

Advance phase

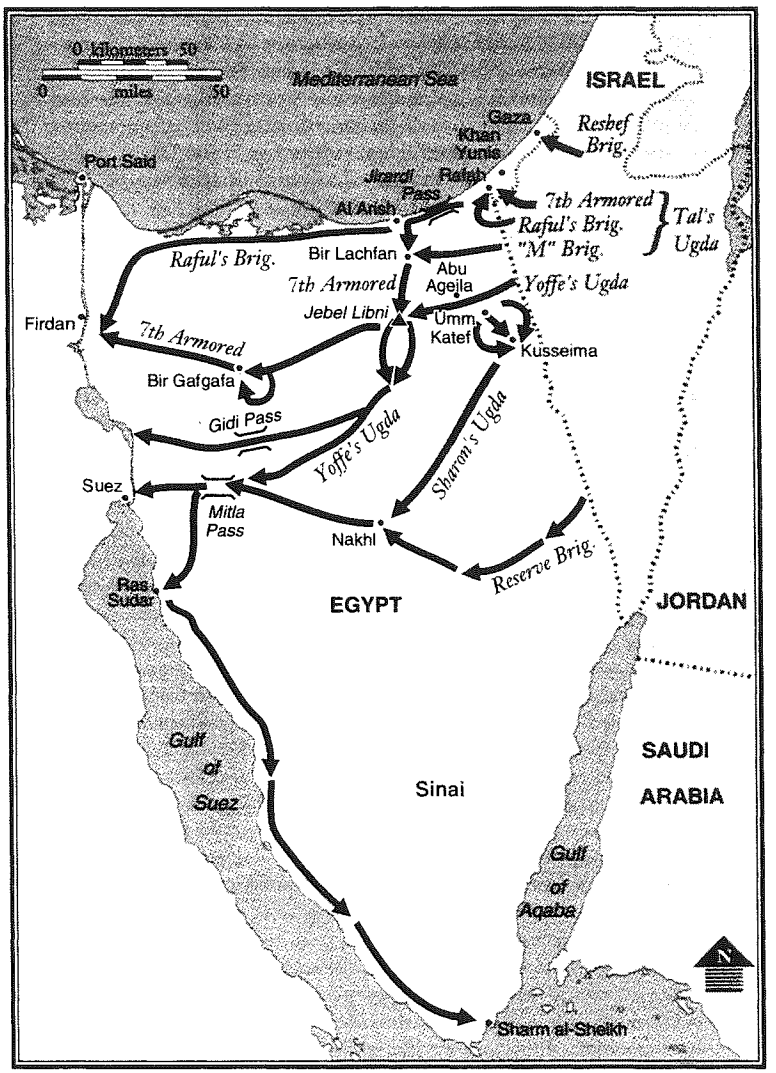
- solo flights on tactical aircraft.

After the flight course the operational training course still separated the fresh pilots from the certified ones.

Cohen: Israel's Best Defence, p. 156 – 158.

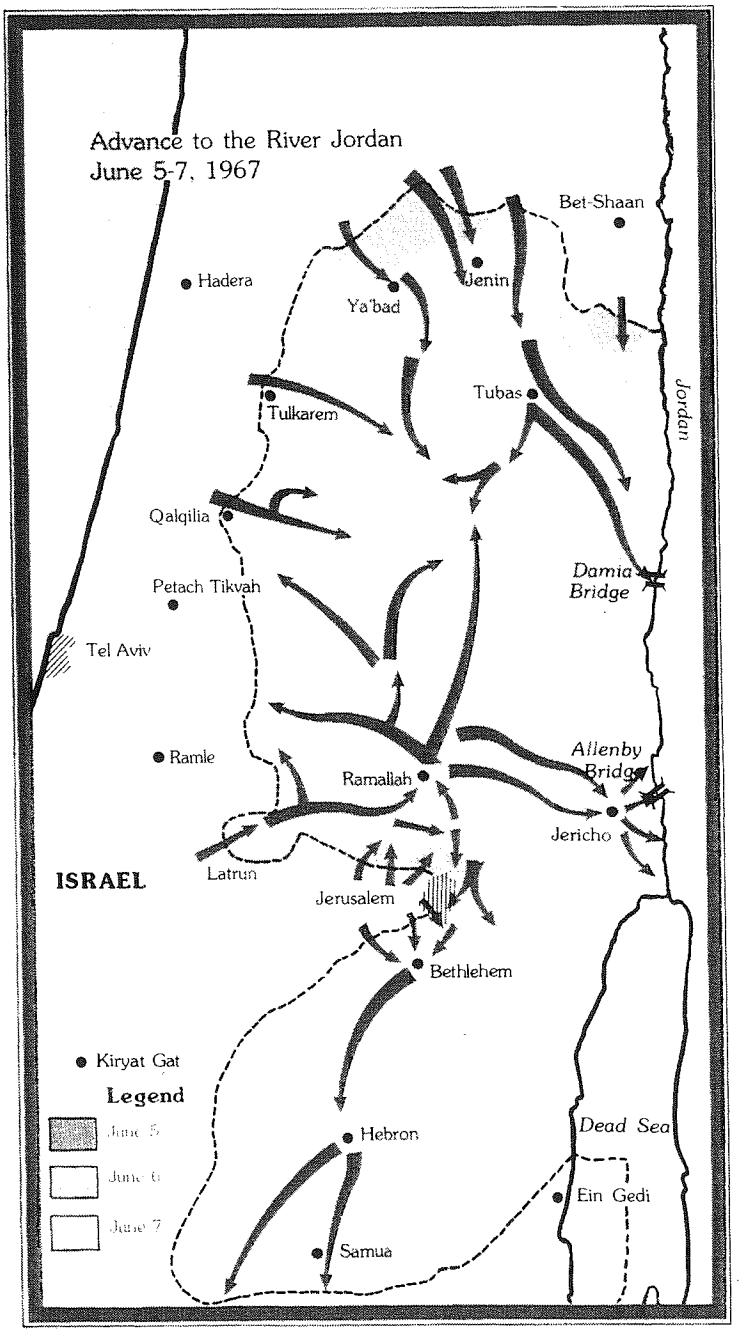
ISRAELI OPERATIONS DURING THE SIX DAY WAR

Sinai Front



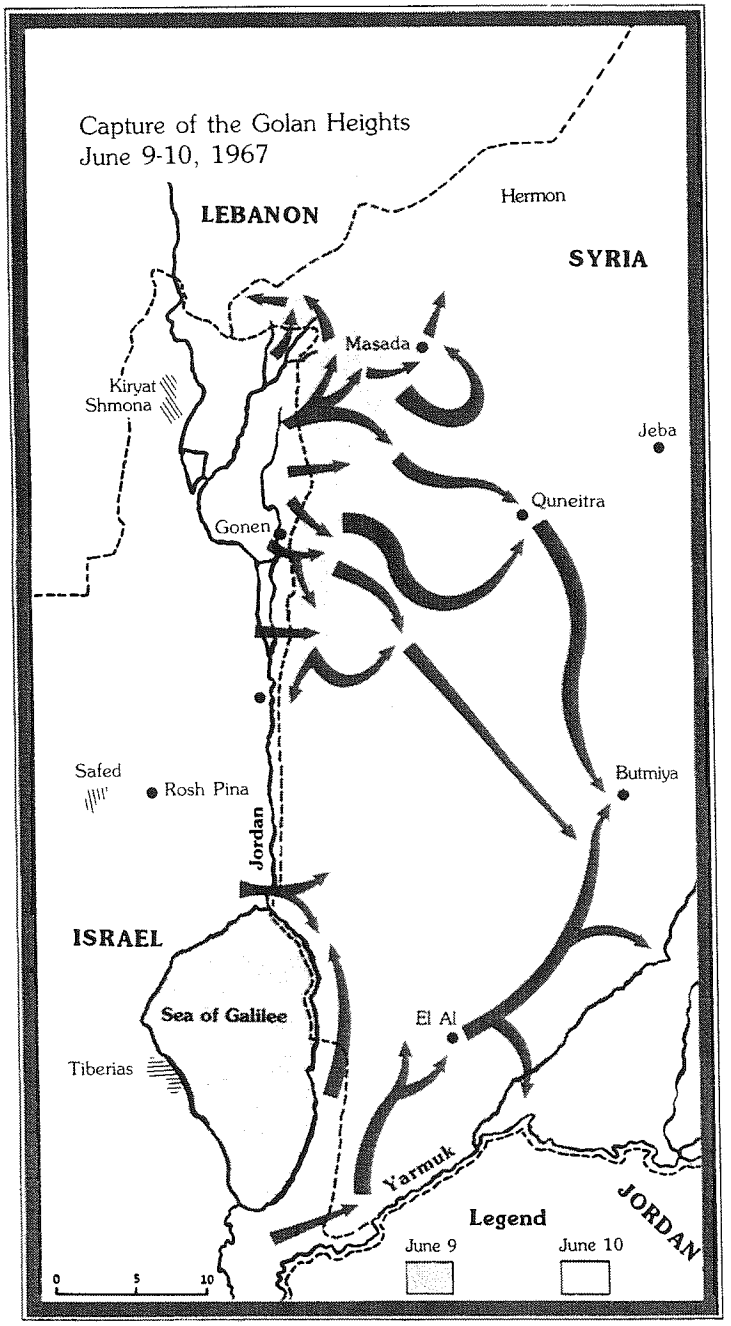
Van Creveld: The Sword and the Olive, p. 181.

West Bank



Williams: Israel Defence Forces, inner cover.

Golan Heights



Williams: Israel Defence Forces, inner cover.

APPROXIMATE STRENGTHS, ORDERS OF BATTLE AND ESTIMATED LOSSES OF OPPOSING FORCES DURING THE SIX DAY WAR 1967

Strengths

	Israel	Arab total	Egypt	Syria	Jordan
Manpower	250 000	248 000 – 328 000	130 000 – 210 000 [1]	63 000 [2]	55 000
Tanks	800 – 1 000 [3]	2 000 – 2 300	1 000 – 1 300 [4]	750 [2]	290 [5]
APCs	1 500 [6]	1 845	1050 [7]	585 [7]	210
Artillery	200	960	575	315	263
SAMs	50	160 [8]	160	-	-
AA guns	550	over 2 000	950	1 000	143
Combat aircraft	286 [9]	680	430 [10]	130 [11]	18
Vessels	20 – 25 [12]		over 85 [13]	over 20 [14]	

[1] Gawrych gives the smaller number and Dupuy the larger one. Dupuy has also counted Egyptian forces committed in Yemen. They were at least 50 000 at that time.
[2] All not committed.
[3] The smaller number is presented in *Military Balance* and in *The Lessons of Modern War*. This includes 200 *M-48 Pattons*, 250 *Centurion Mark 5*s and *7*s, 150 *AMX-13*s and 200 *Shermans*. Dupuy has counted 400 *Shermans* and *Super Shermans*.
[4] The larger number also includes assault guns. The forces consisted of over 400 *T-34*s, over 450 *T-54/55*s, over 100 *Su-100*s and over 100 *JS-3*s.
[5] 200 *M-48 Pattons* and 90 *Centurions*.
[6] *M-2* and *M-3* halftracks.
[7] Soviet-made APCs.
[8] *Sa-2*s.
[9] 92 *Mirage IIIs*, 24 *Super Mystères*, 82 *Mystères*, 55 *Ouragans*, 24 *Vautours* and 60 *Fouga Magister* trainers.
[10] 55 *Su-6*s, 163 *MiG-21*s, 40 *MiG-19*s, 100 *MiG-15/17*s, 30 *Tu-16*s and 43 *Il-28*s.
[11] 40 *MiG-21*s/*MiG-19*s, 68 *MiG-15/17*s, 15 *Tu-16*s and 4 *Il-28*s.
[12] 2 – 3 destroyers and frigates, 9 – 15 patrol and torpedo boats, 3 – 4 submarines, 3 landing craft.
[13] 7 destroyers and frigates, 12 submarines, 18 missile boat (8 *Komar*, 10 *Osa*), 44 patrol and torpedo boats and 5 landing craft.
[14] 4 *Komar* missile boats and 17 patrol and torpedo boats.

Israel's order of battle

Chief of General Staff (Rabin)

Southern Command (Gavish)
- Armoured Division (northern Sinai, Israel Tal)
  - Armoured Brigade
  - Armoured Brigade
  - Paratroop Brigade
  - Armoured Recon Task Force
  - "Granit" Task Force
- Armoured Division (central Sinai, Avraham Yoffe)
  - Armoured Brigade
  - Armoured Brigade
- Armoured Division (southern central Sinai, Ariel Sharon)
  - Armoured Brigade
  - Infantry Brigade
  - Paratroop Brigade
- Armoured Brigade (Gaza)
- Infantry Brigade
- Paratroop Task Force (Sharm-el-Sheikh)

Central Command (Narkiss)
- Infantry Brigade (Jerusalem)
- Paratroop Brigade
- Mechanised Brigade
- Infantry Brigade (Kalkilya)
- Infantry Brigade (Latrun)

Northern Command (Elazar)
- Armoured Division (Jordan front, Elad Peled)
  - Infantry Brigade
  - Armoured Brigade
  - Armoured Brigade
- Composite Division (Syrian front, Dan Laner)
  - Armoured Brigade
  - Infatry Brigade
- Infantry Brigade

Air Force (Hod)
Navy (Nun)

Arab orders of battle

Egypt	Syria	Jordan
Chief of Staff Armed Forces Front Commander-in Chief Front Chief of Staff Field Army Commader 2nd Infantry Division 3rd Infantry Division 4th Armoured Division Armoured Task Force 6th Mechanised Division 7th Infantry Division 20th PLA Division (Gaza) [1] Independent Infantry Brigade (Sharm-el-Sheikh) Air Force Navy	Commanding General, Field Army 12th Group Brigade - 11th Infantry Brigade - 132nd Reserve Infantry Brigade - 89th Reserve Infantry Brigade - 44th Armoured Brigade 35th Group Brigade - 8th Infantry Brigade - 19th Infantry Brigade - 32nd Infantry Brigade - 17th Mechanised Infantry Brigade 42nd Group Brigade - 14th Armoured Brigade - 25th Infantry Brigade - 50th Reserve Infantry Brigade - 60th Reserve Infantry Brigade 23rd Infantry Brigade (Latakia) Air Force Navy	Allied Commander-in-Chief Jordanian Front Commander-in-Chief Deputy Commander-in-Chief Chief of Staff Commanding General, West Front Immam Ali Infantry Brigade Hittin Infantry Brigade (Hebron) 25th Infantry Brigade (Jenin) 60th Armoured Brigade (Jericho) 40th Armoured Brigade (Damiya) 27th Infantry Brigade (Jerusalem) Qadisiyeh Infantry Brigade (Jordan Valley) Princess Alia Infantry Brigade (Nablus) El Hashimi Infantry Brigade (Ramallah) El Yarmouk Infantry Brigade (Northern sect) Air Force

1) PLA = Palestinian Liberation Army

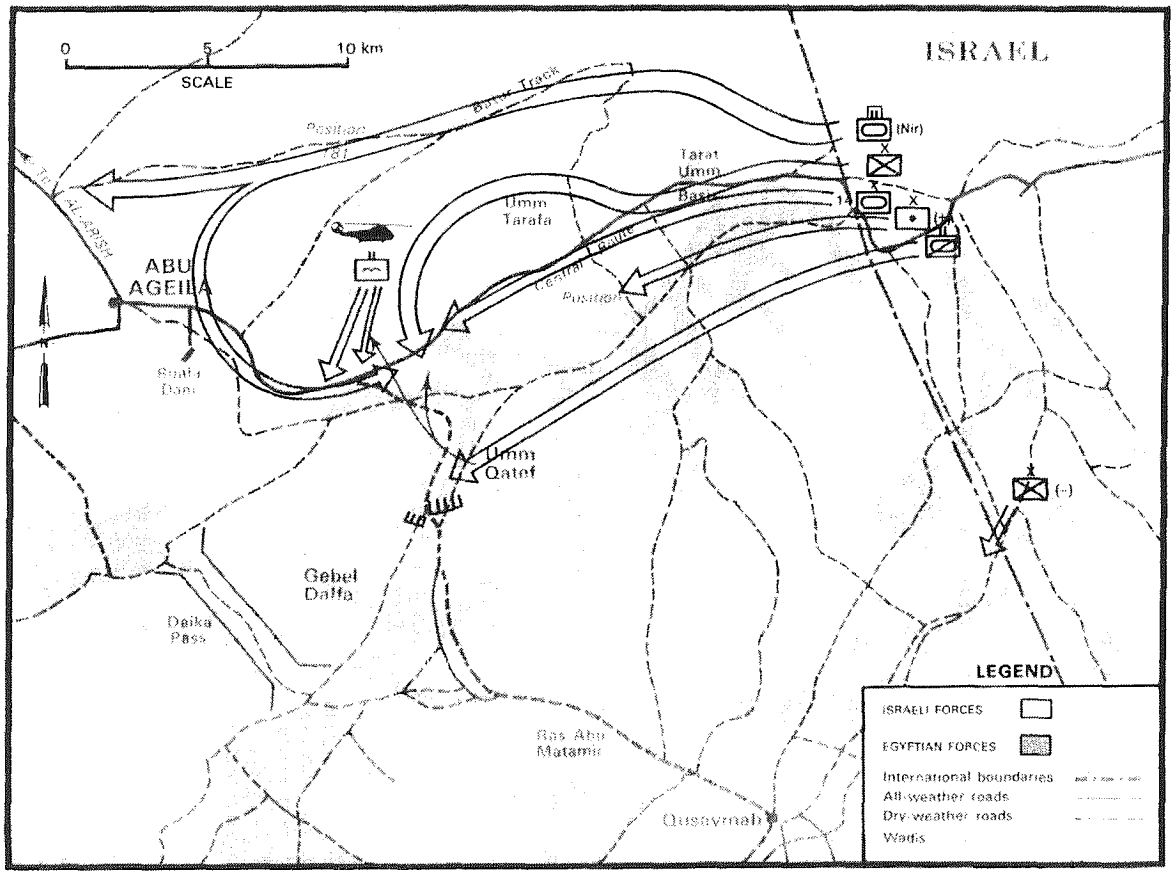
Losses

	Israel	Egypt	Syria	Jordan	Iraq
Killed	983	3 000	600	696	
Wounded	4 517	5 000	700	421	
Captured/ Missing	15	5 000	570	2 000	
Total	5 515	13 000	1 870	3 117	
Tanks	394 [13]	700	86	179	
Aircraft	40 – 49 [14]	356 [15]	55	18	15

[13)] According to Dupuy, half were repaired and returned to full operational status.
[14)] Lower end of range is given by Dupuy and Cordesman and Wagner and higher end by Cohen.
[15)] According to Dupuy, 322 during the first day, on 5 June.

1) Dupuy: Elusive Victory, p. 333 and 337 – 340, **2)** Cordesman & Wagner: The Lessons of the Modern War, vol. 1, p. 15 and 17 – 18, **3)** Gawrych: Key to the Sinai, p. 77 – 78, **4)** Cohen: Israel's Best Defense, p. 253 and **5)** Military Balance 1966 – 1967, p. 37 – 38 and 41.

SHARON'S OPERATION AT ABU AGEILA IN 1967



Gawrych: Key to the Sinai, p. 94.

APPENDIX 17

APPROXIMATE STRENGTHS, ORDERS OF BATTLE AND ESTIMATED LOSSES OF OPPOSING FORCES DURING THE YOM KIPPUR WAR 1973

Strengths

	Israel	Arab total	Egypt	Syria	Iraq	Jordan	Other Arabs
Manpower	310 000 [1]	505 000	315 000 [2]	140 000 [3]	20 000 [4]	5 000 [5]	25 000
Tanks	1 800 – 2 000 [6]	4 270 – 4 570	2 100 [7]	1 350 – 1650 [8]	300	150	370
APCs	3 000 – 3 500 [9]	3 620 – 4 320	2 000 – 2 400 [10]	1 000 – 1300 [10]	300	200	120

[1] Total manpower, according to Cordesman and Wagner, over 370 000.
[2] Dupuy states that Egyptian mobilisation strength was over 1 000 000 men while Military Balance gives the number of some 800 000.
[3] Total manpower, according to Cordesman and Wagner, over 270 000.
[4] Total manpower, according to Dupuy, 95 000.
[5] Total manpower between 70 – 75 000.
[6] Source Military Balance, Dupuy and Cordesman and Wagner give the larger numbers. This force consists of 400 *M-48 Patton*s, 250 *Ben-Gurion*s (modernised *Centurion*s), 600 *Centurion*s, 200 *Ishermans* (modernised *Sherman*s) and *Super Sherman*s, 150 *TI-67* (captured *T-54/55*s), 150 *M-60 Patton*s and some 50 self-propelled antitank guns.
[7] Egyptian tanks include 1 650 *T-54/55*s, 100 *T-62*s, 100 *T-34*s, 75 *PT-76*s, 150 *Su-100*s and *Jsu-152*s and 30 *JS-3*s.
[8] Sources Military Balance and Cordesman and Wagner. The latter give the larger numbers. Dupuy counts the number of Syrian tanks as high as 1 820. The main bulk of the Syrian tanks were *T-54s/55*s, but they also had a number of *T-62*s.
[9] Lower end of range from Military Balance and larger Cordesman and Wagner. Includes some 500 *M-113 Zelda*s and the rest *M-2* and *M-3* halftracks. Dupuy gives as large number as 4 000 of which 500 *Zelda*s.
[10] Lower end of range from Military Balance and higher Cordesman and Wagner and Dupuy. Includes *BTR-40*s, *BTR-50P*s, *BTR-60P*s, *OT-64*s and *BTR-152*s.

	Israel	Arab total	Egypt	Syria	Iraq	Jordan	Other Arabs
Artillery [11]	570	2 055	1 210	655	54	36	100
SAM launchers	75 – 95 [12]	1 280	880 [13]	360 [14]	20		20
AA guns	1 000	over 3 650	2 750	1 900			
AT missiles	280 [15]	1 200	850 [16]	350 [16]			
AT rockets	650	over 5 300	2 500	2 800			
AT guns		over 2 200	1 300	900			

[11] Over 100 mm.
[12] *Hawk*s and *Chaparral*s.
[13] *Sa-2*s and *Sa-3*s, include 80 *Sa-6*s.
[14] *Sa-2*s and *Sa-3*s, include 60 *Sa-6*s.
[15] French-made *SS-10* and *SS-11*s. Later during the war the IDF got also some American-made *TOW*s.
[16] Mainly Soviet-made *Sagger*s, some *Snapper*s.

	Israel	Arab total	Egypt	Syria	Iraq	Jordan	Other Arabs
Combat aircraft	360 – 490 [17]	840 – 990	420 – 620 [18]	275 – 325 [19]	73		90
Helicopters	74 [20]		80 [21]	30 [21]			
Vessels	over 50 [22]		109 – 115 [23]	some 25 [24]			

[17] The larger number includes trainers and planes in storage. The force consisted of 95 *F-4E Phantom*s, 35 *Mirage III*s, 160 *A-4E/H Skyhawk*s, 24 *Barak*s, 18 *Super Mystère*s, 6 *RF-4E*s, 23 *Mystère IV A*s (in reserve), 12 *Vautour*s (in storage), 30 *Ouragan*s (in training) and 85 *Fouga Magister*s (in training).

[18] Includes some 200 in storage. According to Military Balance, the Egyptian Air Force consisted 210 *MiG-21F*s, 80 *Su-7*s, 100 *MiG-17*s, 25 *Tu-16*s, 5 *Il-28*s and 200 older *MiG*s (in storage and training). Dupuy estimates that *MiG-17*s (200 planes) formed the main bulk of the Egyptian Air Force instead of *MiG-21*s (160). He shows also a little bit larger numbers.

[19] Includes some 50 in storage. According to Military Balance the force consisted of 200 *MiG-21F*s (some in storage), 80 *MiG-17*s, 30 *Su-7*s and some *Il-28*s. Likewise in the Egyptian Air Force, Dupuy estimates that *MiG-17*s formed the skeleton of the Syrian Air Force. According Dupuy, the Syrians had 120 *MiG-17*s, 110 *MiG-21*s and 45 *Su-7*s.

[20] Includes 12 *Super Frelon*s, 12 *CH-53G*s, 20 *AB-205A*s, 25 *UH-1D Iroquis* and 5 *Alouette II*s.

[21] Includes only *Mi-8* and *Mi-6* transport helicopters.

[22] 13 – 14 missile boats (12 *Saar*, 1 – 2 *Reshef*), 1 destroyer, 1 submarine (2 in reserve), 9 motor torpedo boats, 23 patrol boats and 9 landing craft.

[23] 17 – 19 missile boats (12 *Osa*, 5 – 7 *Komar*), 8 – 10 destroyers and frigates, 12 submarines, 24 small craft (including submarine chasers and minesweepers), 34 – 36 motor torpedo boats and 14 landing craft. Lower end of range from Dupuy and higher Military Balance.

[24] 6 – 9 missile boats (6 *Komar*, 3 *Osa*), 12 – 13 motor torpedo boats and 7 small craft (including 2 submarine chasers, 3 minesweepers and 2 coastal patrol vessels).

Israel's order of battle

Chief of Staff

Southern Command
252nd Armoured Division (Mendler, Magen)
- 3 – 4 armoured brigades
- 1 infantry brigade

162nd Armoured Division (Adan)
- 2 – 5 armoured brigades
- 1 paratroop brigade (16 – 17 October)
- 1 infantry brigade (21 – 25 October)

143rd Armoured Division (Sharon)
- 3 armoured brigades
- 1 paratroop brigade (15 October)
- 1 infantry brigade (8 – 13 October)

146th Composite Division (Sassoon)
- 3 mechanised infantry brigades (created c. 13 October)

440th Composite Division (Granit)
- 3 mechanised infantry brigades

Southern Sinai Command (Gavish)
- 2 infantry of mechanised brigades

Central Command (Ephrat)
- 2 brigades

Northern Command (Hofi)
36th Mechanised Division (Eytan)
- 2 armoured brigades
- 1 infantry brigade
- 1 paratroop brigade

240th Armoured Division (Laner)
- 3 – 4 armoured brigades
- 1 infantry brigade (attached c. 9 October)

146th Armoured Division (Moshe Peled)
- 3 – 4 armoured brigades

Air Force
Navy

Egypt's and Syria's orders of battle

Egypt	Syria
Minister of War, Commander-in-Chief	Minister of Defence
Chief of Staff	Chief of Staff
Second Field Army	1st Armoured Division
18th Infantry Division [1]	- 2 armoured brigades
2nd Infantry Division	- 1 mechanised brigade
16th Infantry Division	- 1 artillery brigade
21st Armoured Division [2]	3rd Armoured Division
23rd Mechanised Infantry Division [3]	5th Infantry Division
3 artillery brigades	- 2 infantry brigades
1 parachute brigade	- 1 mechanised brigade
1 independent mechanised brigade	- 1 armoured brigade
1 engineer brigade	- 1 artillery brigade
Commando group	7th Infantry Division
Third Field Army	9th Infantry Division
7th Infantry Division	General Headquarters' forces
19th Infantry Division	- 3 armoured brigades
4th Armoured Division [4]	- 2 infantry brigades
6th Mechanised Infantry Division [3]	- 1 mechanised infantry brigade
2 artillery brigades	- commando group (5 battalions)
1 mortar brigade	- parachute battalion
1 independent mechanised brigade	- Desert Guard Battalion
1 engineer brigade	
Commando group	Air Force
Red Sea Command	Navy
- 2 infantry brigades	
- 1 commando group	Iraqi contingent
General Headquarters' reserve	- 3rd Armoured Division
- 2 mechanised infantry divisions	Jordanian contingent
3rd Mechanised Infantry Division	- 40th Armoured Brigade
2 independent armoured brigades	Moroccan contingent
3 independent artillery brigades	- mechanised infantry brigade
1 independent parachute brigade	Saudi Arabian contingent
2 air assault brigades	- 20th Armoured Brigade
5 independent commando groups	Palestinian Liberation Army
Presidential Guard Brigade	- 2 commando brigades
Air Force	
Air Defence Forces	
Navy	

[1] Egyptian divisions include on average two infantry brigades, one mechanised brigade, one armoured brigade and one artillery brigade.
[2] One armoured brigade, one mechanised brigade and one artillery brigade.
[3] Two mechanised brigades, one armoured brigade and one artillery brigade.
[4] Two armoured brigades, one mechanised brigade and one artillery brigade.

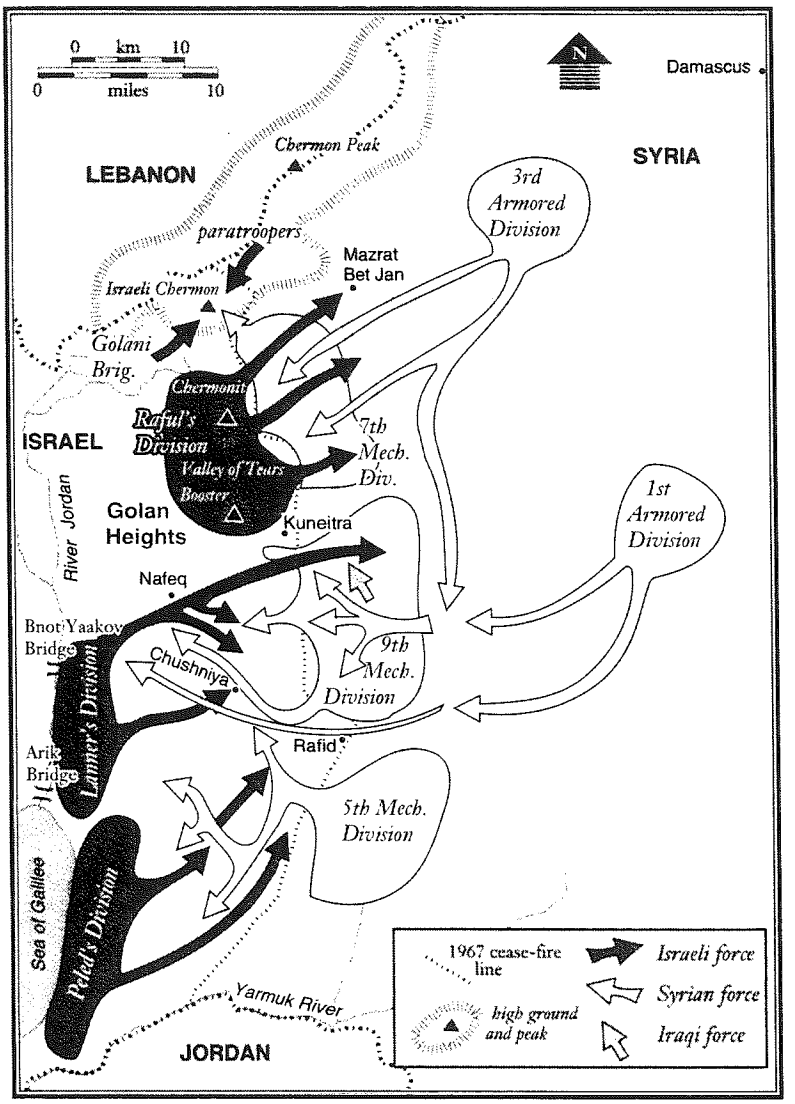
Losses

	Israel	Arab total	Egypt	Syria	Jordan	Iraq	Other Arabs
Killed	2 838	8 528 – 8 970	5 000	3 100 – 3 500 [1]	28	218 – 260 [2]	100
Wounded	8 800	19 549	12 000	6 000	49	600	300
Prisoners/ missing	508	8 421 – 8 551	8 031	370 – 500 [3]		20	
Tanks	440 – 840 [4]	2 454 – 2554	1 100	1 200	54	100 – 200	
APCs	400	over 850	450	400			
Aircraft	103	392	223	118		21	30
Helicopters	6	55	42	13			
SAM batteries		47	44	3			
Vessels	1	15	10	5			

[1] Lower end of the range given by Dupuy and higher by Cordesman and Wagner.
[2] Lower end of the range given by Dupuy and higher by Cordesman and Wagner.
[3] Lower end of the range given by Cordesman and Wagner and higher Dupuy.
[4] Higher end of the range reflects total losses. The IDF was able to return some 400 tanks to combat by the end of the war.

1) Dupuy: Elusive Victory, p. 606, 608 – 609 and 612 – 617, **2)** Military Balance 1973 – 1974, p. 31 – 36 and **3)** Cordesman & Wagner: The Lessons of Modern War, vol. 1, p. 15 – 16 and 18.

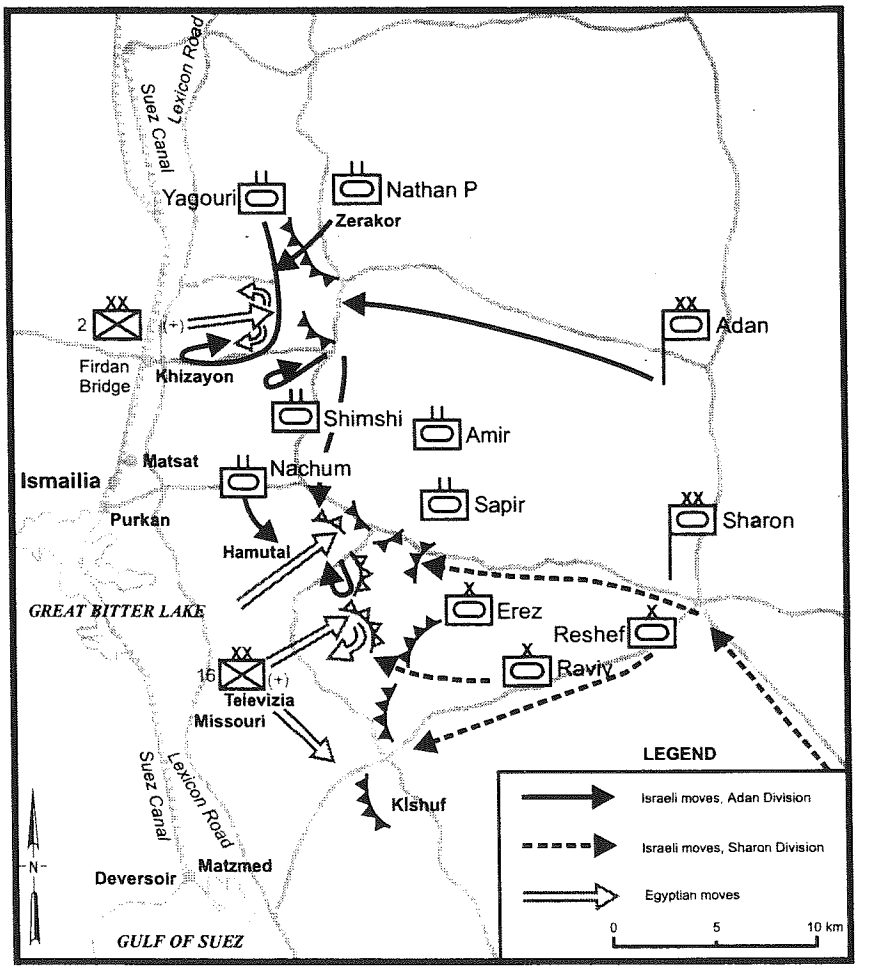
OPERATIONS ON THE SYRIAN FRONT DURING THE YOM KIPPUR WAR



Van Creveld: The Sword and the Olive, p. 230.

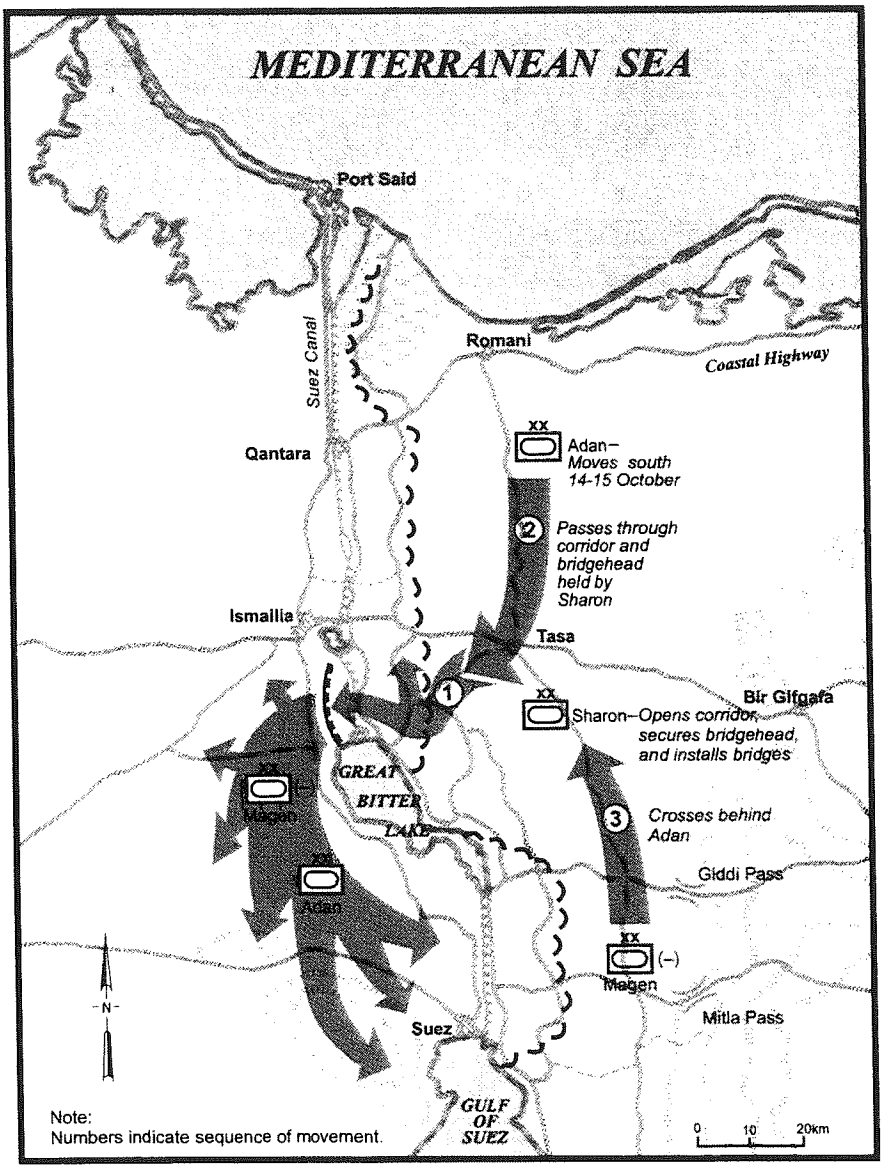
ISRAELI OPERATIONS ON THE EGYPTIAN FRONT DURING THE YOM KIPPUR WAR

Israeli counterattack on 8 October 1973



Gawrych: The 1973 Arab-Israeli War, p. 47.

Operation "Gazelle"



Gawrych: The 1973 Arab-Israeli War, p. 66.

THE STRENGTH OF THE ISRAELI DEFENCE FORCES IN 1982

Manpower

Total manpower	573 500
- regular	51 700
- conscripts	120 300
- mobilisation	400 000
Army (including civil defence units)	485 000
- regular	25 000
- conscripts	110 000
- mobilisation	350 000

11 armoured divisions
33 armoured brigades (3 tank, 1 mechanised infantry battalions)
10 mechanised infantry brigades (5 para-trained)
12 territorial/border infantry brigades with NAHAL
15 artillery brigades (each 5 battalions of 3 batteries)

Air Force	65 000
- regular	21 000
- conscripts	7 000
- mobilisation	37 000
Navy	19 000
- regular	5 700
- conscripts	3 300
- mobilisation	10 000
Border Guards and *Coastguard*	4 500

Armament and equipment

Army

3 500 tanks (1 100 *Centurions*, 650 *M-48 Pattons*, 810 *M-60 Pattons*, 100 *Merkavas*, 250 *T-54/55*s and 150 *T-62*s).
8 000 AFVs and **APCs** (4 000 *M-113 Zeldas*, *Shoet Mk 2*, *RBY Ramta*, *BRDM-1/-2*, *M-2/-3*, different types of *BTR*s).
Some **950 self-propelled guns** (500 *Soltam* 155mm on *Sherman* chassis, *M-107*, *M-109*, *M-110*), different types MRLs.
Different types of **ATGW** (*TOW*, *Cobra*, *Dragon*, *Picket*).
900 different types of **AA guns**, 2 batteries of with 24 *Vulcan/Chaparral* gun/missile systems.

Air Force

602 combat aircraft (some 150 in storage; 25 *F/TF-15 Eagle*s, 138 *F-4E Phantom*s, 27 *Mirage III*s, 85 *Kfir C-2*s, 53 *F-16 Fighting Falcon*s, 246 *A-4 Skyhawk*s of different type and 14 *RF-4E*s).
Some **50 transports** (4 *Boeing 707*s, 22 *C-130 Hercules*, 21 *C-47*s and 6 *Avaras*).
12 AWACS and **ECM planes** (including 4 *E-2C Hawkeye* AWACS and 4 *Boeing 707* ECM planes).
32 armed helicopters (*AH-1G*s, *Hughes*).
43 transport helicopters (10 *Super Frelon*s, 33 *CH-53*s).
15 SAM battalions (improved *HAWK*).

Navy

Over 70 vessels and boats
22 missile boats (10 *Reshef*, 12 *Saar*)
3 submarines (*Type 206*)
2 corvettes (*Aliya*, 4 *Gabriel* missiles, helicopter)
40 coastal patrol craft
6 landing craft
Naval commandos

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1) Military Balance 1981 – 1982, p. 52 and **2)** Gabriel: Operation Peace for Galilee, p. 21.

National Defence College of Finland, Publication series 1

N:o 1	Raimo Heiskanen, Talvisodan operaatioiden johtaminen ja edellytysten luominen sodankäynnille Päämajan operatiivisen osaston näkökulmasta. Saarijärvi 1996.
N:o 2	Eero Elfvengren, Suomen yleisesikunnan organisaation synty ja vakiintuminen vuosina 1918 – 1925. Helsinki 1997.
N:o 3	Eero Elfvengren, Laajasta johtoesikunnasta Mannerheimin yleisesikunnaksi. Yleisesikunnan organisaatio vuosina 1925 – 1939. Helsinki 2000.
N:o 4	Risto Ropponen, Ruotsi ja "Venäjän vaara" 1914 – 1917. Ruotsin sotilaspoliittinen arvio Venäjän voimasta ensimmäisen maailmansodan aikana. Helsinki 2001.
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ISBN 951-25-1271-8
ISSN 1456-5196

Maanpuolustuskorkeakoulu
National Defence College